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/16

annual report

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ABOUT THE AER › THE WEB ABOUT

THE ALBERTA ENERGY REGULATOR (AER) IS THE SINGLE PROVINCIAL REGULATOR FOR OIL, NATURAL GAS, OIL SANDS, AND COAL DEVELOPMENT IN ALBERTA. THE AER ENSURES THE SAFE, EFFICIENT, ORDERLY, AND ENVIRONMENTALLY RESPONSIBLE DEVELOPMENT OF ENERGY RESOURCES. THIS INCLUDES ALLOCATING AND CONSERVING WATER, MANAGING PUBLIC LANDS, AND PROTECTING THE ENVIRONMENT WHILE SECURING ECONOMIC BENEFITS FOR ALL ALBERTANS.



That's what we say, but what do we mean?

The Alberta Energy Regulator (AER) is the single provincial regulator for oil, natural gas, oil sands, and coal development in Alberta. This means that in almost all cases, companies deal with the AER alone when developing or proposing to develop Alberta's energy resources.

The AER ensures the safe, efficient, orderly, and environmentally responsible development of energy resources. It's our job to make certain that Alberta's oil, gas, bitumen, and coal are developed and transported in ways that don't

- place people at risk;
- harm our air, water, land, or biodiversity; or
- waste these valuable energy resources.

This includes allocating and conserving water, managing public lands, and protecting the environment

... We determine when, where, and how the energy industry may use water, and we make sure that energy development doesn't harm Alberta's water; we regulate any energy development that occurs on provincial lands; and we make sure energy development doesn't damage any aspect of our province's environment.

... while securing economic benefits for all Albertans.

We are part of a broader government system making sure that Alberta and its citizens receive full value for our energy riches.

OUR RESPONSIBILITIES

Few organizations on this planet steward such a large and varied mix of energy resources and infrastructure as the AER. We oversee some very large established reserves:

- 1.8 billion barrels of conventional oil
- 165 billion barrels of bitumen
- 29 trillion cubic feet of conventional natural gas
- 37 billion tons of coal

That's a lot of energy, and it requires a lot of infrastructure to produce, mine, process, and move to markets. We're responsible for regulating this infrastructure too, which belongs to what's called "upstream" development:

- over 431 000 kilometres of pipelines (the distance to the moon is 384 000 km)
- over 174 000 operating wells
- over 30 000 oil facilities
- 50 thermal in situ (oil sands recovery) projects
- 9 oil sands mines
- 5 bitumen upgraders
- 4 coal processing plants
- 7 producing coal mines

OVER **200**
PRIMARY/ENHANCED
RECOVERY PROJECTS
(IN SITU)

AND

13
EXPERIMENTAL
PROJECTS

797
GAS PROCESSING PLANTS

MORE
THAN **30 000**
OIL FACILITIES



OVER **431 000**
KILOMETRES OF PIPELINES



OVER **174 000**
OPERATING NATURAL GAS & OIL WELLS

AND
CLOSE
TO

21 000
GAS FACILITIES

WHAT
WE
REGULATE

ON



MORE
THAN

50
THERMAL/ENHANCED
IN SITU PROJECTS



9
OIL SANDS
MINES



5
BITUMEN
UPGRADERS



4
COAL
PROCESSING PLANTS



7
PRODUCING
COAL MINES

The Government of Alberta gives the AER authority to ensure that companies develop the province's massive energy resources in a safe and environmentally responsible fashion, and without waste.

- We review applications and make decisions on proposed energy developments (over 47 000 applications processed in fiscal 2015/16).
- We oversee all aspects of energy resource activities in accordance with government policies.
- We regularly inspect energy activities to ensure that all applicable requirements are met.
- We penalize companies that fail to comply with AER requirements.
- We hold hearings on proposed energy developments.

To make it happen, the AER employs some 1200 inspectors, technical staff, scientists, investigators, stakeholder engagement specialists, mediators, lawyers, regulatory experts, and other employees in 15 locations around Alberta.

The AER also offers two unique and world-class services: the Core Research Centre (CRC) and the Alberta Geological Survey (AGS).

The CRC collects, preserves, and displays core samples (1.5 million boxes worth of these cylindrical rock samples), drill cuttings (20 million vials of them), and drilling and completion records from over 400 000 wells; companies use these to research what's below the ground and plan how to develop oil and gas.

The AGS offers a scientific view into the world beneath Alberta. AGS geoscientists provide many services, including determining the effects of oil and gas development on seismic events, monitoring the Crowsnest Pass's unstable Turtle Mountain, and mapping Alberta's valuable groundwater resources.

ALBERTA'S SINGLE ENERGY REGULATOR

The Government of Alberta created the AER in 2013 when it proclaimed the *Responsible Energy Development Act*. We took on regulatory functions related to energy development that were previously held by Alberta Environment and Sustainable Resource Development (now Alberta Environment and Parks) and combining them with the regulatory functions of the Energy Resources Conservation Board.

The AER's role is to develop and enforce rules and regulations around energy development, taking direction from government policy.

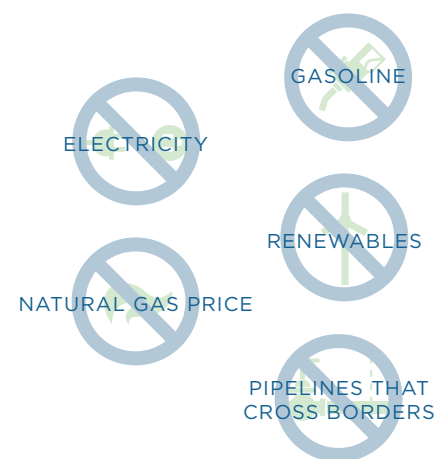
The AER is a key partner in the government's *Integrated Resource Management System (IRMS)*, a collaborative approach to managing Alberta's environment and natural resources. Other partners are the government departments of Indigenous Relations, Energy, Agriculture and Forestry, and Environment and Parks.

WHAT WE DON'T REGULATE

The AER's authority is limited to activities that relate to oil, bitumen, natural gas, and coal development. We have no authority over any of the following:

- any aspect of electricity generation or distribution, including renewable energies, gas utility pipelines, and the price of natural gas (these are regulated by the Alberta Utilities Commission),
- gasoline or other refined petroleum products, or
- oil and gas pipelines that cross provincial or international borders (these are regulated by the National Energy Board).

WHAT WE DON'T REGULATE



A low-angle, upward-looking shot of a telecommunications tower. The tower's structure, including multiple levels of antennas and support beams, is visible against a cloudy sky. The entire image is overlaid with a semi-transparent blue filter. A large, light-colored, stylized letter 'M' is positioned on the right side of the frame, acting as a watermark or design element. The word 'MESSAGES' is written in a white, bold, sans-serif font across the middle-left portion of the image, with a faint reflection visible directly beneath it.

MESSAGES

MESSAGE from the chair

Weighed down by low oil and gas prices, there is no denying that the past year has been among the more challenging ones Alberta has endured in a long time. When we launched the AER in 2013, we had no way of knowing that the province would undergo such a significant downturn within a couple of years.

The AER's CEO and executive leadership team, hearing commissioners, and especially our employees, are to be commended for their work over the last year. Thanks to them, the AER has celebrated many successes (discussed in more detail throughout the report), including

- our work to define and craft a made-in-Alberta model of **regulatory excellence**;
- moving towards a **risk-based** approach to energy regulation;
- launching programs that further protect our environment and ensure Albertans can trust their regulator; and
- introducing regulatory process efficiencies, significantly reducing the administrative costs to industry while maintaining high expectations for safety and environmental performance.

In these uncertain times, Albertans can be assured that AER inspectors continue to visit facilities around the province and are diligent in ensuring that operations are safe for both the nearby land owners and communities and surrounding land, water, and air.

We continue to receive applications and authorize projects; our **stakeholders** remain a priority, and we strive to ensure all sides of the discussion are heard, respected, and responded to.

The AER's staff have continued to demonstrate passion for their work, and the CEO and the rest of the executive leadership team have done a remarkable job of leading the regulator through challenging times. The board recognizes and thanks the AER's management and staff for this diligence.

This work has included supporting our new government partners through their transition and moving towards a regulatory approach that considers the risk an activity poses to public safety and the environment. It is clear that the old way of providing a one-size-fits-all approach to regulation will no longer suffice. In our line of work, generic regulation sometimes lacks precision and focus, and the only way to prevent this is to tailor our regulatory tools to fit the activity and particularly its associated risk.

Last year the board bid farewell to two directors whose terms expired—Fred Estlin and Cam Bailey—who played critical roles in the establishment of strong governance practices and oversight of the AER. The board thanks them for their contribution and wishes them well in their future endeavours.

The board's activities can be found on page 60.

As the board looks ahead to what's in store for the AER, there are a few things that we can count on: continued excellence from a dedicated group of staff experts who demonstrate their care for Alberta, strong relationships with our government partners that ensure regulations and rules are the most effective they can be, and an agile organization that will evolve with technology to protect what matters to Albertans.

GERRY PROTTI
CHAIR



MESSAGE from the president and ceo

Alberta is living through some rocky times as we grapple with the effects of a collapse in oil and gas prices not seen for years. Like others, the AER's economists forecast a slow recovery beyond 2016, which is little comfort, but that's where we stand.



JIM ELLIS
PRESIDENT AND CEO

Regardless of this economic environment, the AER continues to regulate one of the largest and most diverse energy sectors on the planet. While we must understand the realities of our current economy, protecting the environment and the public remain our top priorities. That's why over the last two years we've worked to make our regulatory system more efficient without compromising safety or the environment. These efforts have yielded hundreds of millions of dollars in savings to industry. This work is outlined on page 30.

We've also delivered on commitments to strengthen public safety and environmental protection. For example, we completed our program to inspect all dams related to the development of oil sands, oil and gas, and coal; we also introduced the *Integrated Compliance Assurance Framework*, which outlines how we ensure companies are following our rules.

As we've delivered on these and many other initiatives, we've been ever mindful of securing Albertan's trust. Trust is earned; it takes time to achieve and can evaporate very quickly if we're not careful. What's more, trust leads to public confidence; people must have confidence in the regulator so they know that development can occur safely, in an environmentally responsible manner, and without waste.

Other players share responsibility for gaining and holding Albertan's trust and confidence. Government must develop sound public policy that addresses the issues of responsible development, and industry must understand and follow the rules—and exceed them where possible.

Our public stakeholders and Albertans in general represent the final player, as their expectations ultimately holds us accountable. The expectations of public involvement in resource development decisions have never been greater. In fact, this is evident the world over. People everywhere want to know what's happening and how it affects them, their communities, and the environment.

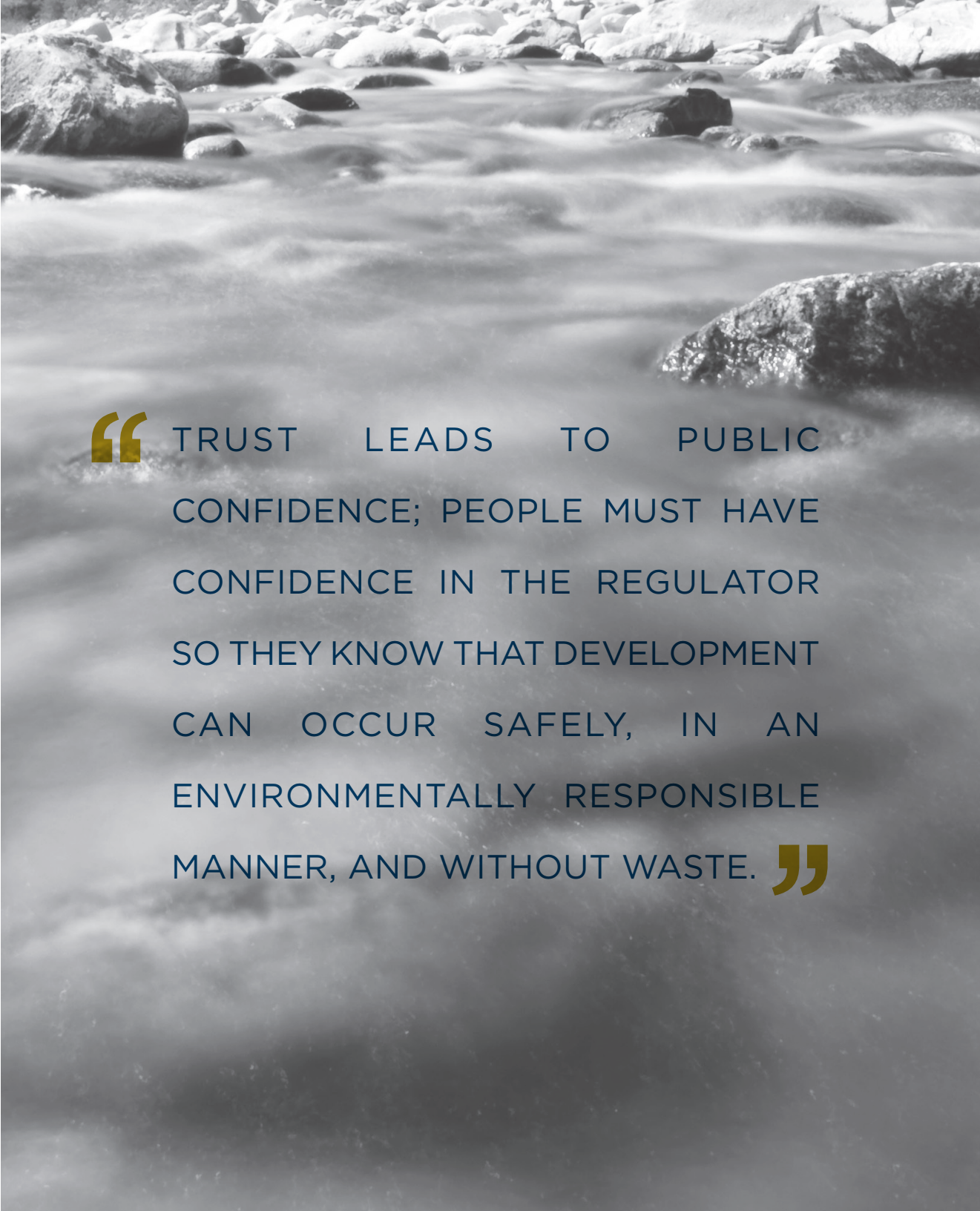
We continue to involve our stakeholders in a number of issues. A good example is how we've worked directly with numerous stakeholder groups to co-create regulatory requirements to manage fluid *tailings* in the oil sands.

The AER is working to design a new regulatory approach that considers how multiple development activities could affect a specific area and the *cumulative effects* of those activities over time. This *area-based regulation* will take into account all impacts the development has on the local community.

All of this speaks to a vision we've had since we were formed in 2013: excellence. We aspire to achieve excellence in energy regulation, which is what Albertans expect and is what they deserve. With that in mind, we undertook an initiative to become an excellent regulator.

We now have a model to guide our work and help us become a regulator that has **utmost integrity**, **stellar competence**, and **empathic engagement**—the three attributes of an excellent regulator. We then took this to stakeholders and Albertans for their input. We have also created the Centre of Regulatory Excellence to ensure our employees have the skills, knowledge, and training to carry out their responsibilities today and help us work towards achieving excellence in the future. Our strategic plan, found on page 52, outlines how we will achieve our vision and meet expectations.

Regulatory excellence is one of the stories we will share with you in this our third annual report. A hallmark of integrity is accountability, and within these pages we make ourselves accountable by recounting our accomplishments, noting where we've met our targets and where we have more work to do. I encourage you to read some of our stories to get to know us and understand how we are achieving our vision.



“ TRUST LEADS TO PUBLIC
CONFIDENCE; PEOPLE MUST HAVE
CONFIDENCE IN THE REGULATOR
SO THEY KNOW THAT DEVELOPMENT
CAN OCCUR SAFELY, IN AN
ENVIRONMENTALLY RESPONSIBLE
MANNER, AND WITHOUT WASTE. ”

MESSAGE: an employee's perspective

To become an excellent regulator, we have to do more than learn new systems and processes to adapt to the ever-changing world of energy development, we must listen to Albertans, understand their needs, and adapt our approach accordingly. That's what I believe.

As a mediator and engagement specialist with the AER's alternative dispute resolution (ADR) program, I am extremely honored that Albertans let me help them with their concerns, property interests, and community issues. To be a part of these crucial conversations is very humbling, especially as there's always so much to learn about people, the energy industry, and ways to communicate effectively.

When I first started working for the regulator in 2001—back then we were called the Alberta Energy and Utilities Board—there were challenges and tensions related to Alberta's oil and gas industry across the province. People were at odds over issues such as sour gas development and natural gas flaring, and we were seeking a better way to resolve these disputes beyond arbitration, enforcement, or intervening when conflicts had already escalated. The result was ADR—in other words, mediation.

Through ADR, we empower the affected parties to make their own decisions and find their own solutions, because the best way to resolve an issue is for all sides to give direct input. And it's important to note that the AER is not the final decision maker—the folks around the table are. Being an engagement specialist means I get to help connect everyone involved—be it landowners, industry, government, indigenous communities, municipalities, or the AER. ADR, simply put, is about sharing information and understanding our stakeholders, and my role is to help facilitate it.

And I would not be successful without the guidance and technical support from my colleagues sitting next to me or on the other side of the province. They, like me, truly care about this province and the people who live here and dedicate their working careers to making the AER the best possible regulator it can be.

Personally and professionally, I find being part of ADR and this collaborative process very rewarding. I am a landowner myself, and development occurs close to my home, so I can relate to what Albertans hold near and dear: the safety and well-being of family and the environment.

FIONA LeBLANC
ALBERTA STAKEHOLDER ENGAGEMENT





“ BEING AN ENGAGEMENT SPECIAL-
IST MEANS I GET TO HELP CONNECT
EVERYONE INVOLVED—BE IT LAND-
OWNERS, INDUSTRY, GOVERNMENT,
INDIGENOUS COMMUNITIES, MUNICI-
PALITIES, OR THE AER. ”

Brought to life more than 1 billion years of Alberta's geological history with the new AGS website



1 000 000 000

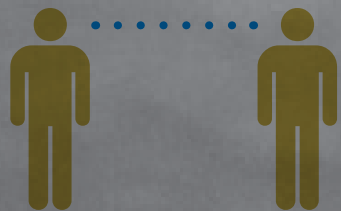


YEARS

↑ TO 82%
77% 

Saw public confidence levels in the AER increase from 77 to 82 per cent

HIGHLIGHTS 2015/16



Sought stakeholder feedback on *Draft Requirements for Hydrocarbon Emission Controls and Gas Conservation in the Peace River Area*



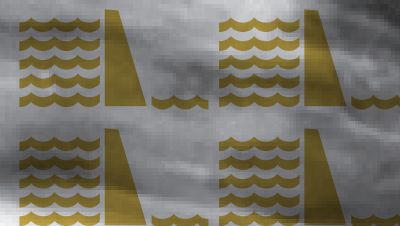
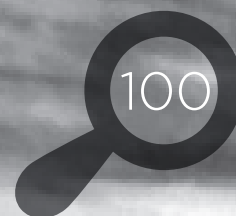
Carried out 7 **compliance sweeps** with 358 inspections in the Peace River area



Created a dashboard with 6 outcomes and 12 performance measures to report on progress in reducing **flaring**, **venting**, and **incinerating**, and increasing gas conservation in the Peace River area



Introduced the *Integrated Compliance Assurance Framework*, which outlines how we ensure companies are following our rules



Inspected 100 energy-related dams as part of the AER's dam safety inspection program

35 

Hosted 35 delegations from 16 different countries, including one from Mexico led by that country's energy minister

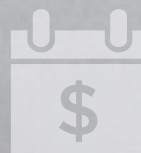
16



1500+

Welcomed feedback from 1500+ people on the AER's proposed model to achieve regulatory excellence

\$200
MILLION



Generated \$200 million in annual savings to industry as a result of changes made to *Directive 017*



Launched *Conversations That Matter*, an animated video series that explains complex energy-related topics in a unique way—viewed almost 60 000 times

PROTECTING WHAT MATTERS › WHAT MATTERS PROTECTING



a protective, effective, efficient, and credible regulator

The AER oversees all oil and gas, oil sands, and coal development throughout the entire life cycle—from initial exploration, to operation, right through to closure, including reclamation and remediation.

With this comes tremendous responsibility; the Government of Alberta entrusts the AER with making sure that energy development occurs in a way that ensures the public is safe, the environment is protected, and Albertans receive the greatest value from our resources. This is why we've organized our strategic plan around four priorities: being protective, effective, efficient, and credible.

The AER's core business is to develop regulatory requirements around energy development—taking direction from government policy—and enforce these requirements. This is how we protect what matters to Albertans—our air, land, water, and biodiversity.

Over the last year, we've worked with our stakeholders to develop strong requirements to better manage fluid tailings associated with oil sands mining operations. We also inspected almost 100 dams within our jurisdiction (see page 23), and carried out thousands of inspections of energy facilities of all types and sizes—from single sour gas facilities to massive oil sands operations.

The AER makes sure our requirements effectively address aging oil and gas infrastructure; in 2015 we continued to ensure that industry is bringing thousands of **inactive wells** into compliance with our regulations. We also recognize the importance of moving towards an effective regulatory framework that considers applications not on a well-by-well basis, but on larger-scale projects.

We understand that the regulatory burden we impose on energy companies affects their ability to develop Alberta's resources in a timely and efficient

manner; this can impact our economy in terms of royalty payments, taxes, and jobs. Therefore, we continue to examine the efficiency of our requirements, eliminating ones that are outdated, redundant, or fail to adapt to current technological trends.

Finally, we work to be a credible regulator by continuously meeting with and seeking feedback from Albertans, indigenous peoples, and our stakeholders, and communicating with them in ways that are accessible and easy to understand.

Through all of our efforts, the AER is confident we are building an organization that will continue to be protective, effective, efficient, and credible.

Over the last year we

- **inspected almost 100 dams,**
- **carried out thousands of inspections of energy facilities of all types,**
- **continued to ensure that industry is bringing thousands of inactive wells into compliance, and**
- **continuously met with and sought feedback from Albertans, indigenous peoples, and our stakeholders.**

taking action in Peace River



The phone rings in the AER's Slave Lake Field Centre: the caller is complaining of a strong odour in the Peace River area and believes it's from a nearby oil and gas site.

To investigate the cause of the odour, an AER inspector first checks local air monitoring stations to narrow down where the odour may be coming from, based on current conditions and wind direction. Then the inspector contacts industry operators in the area and asks them to check their facilities and report back to the AER on findings.

In this case, the source of the odour turns out to be a leaking valve which, when discovered, is repaired immediately by the operator. The inspector then calls the concerned resident back to report what happened. To ensure the operator fixed the problem correctly, the AER also follows up with an unannounced inspection of the site.

Pinpointing the source of odours can be a challenge, and this is an example of the standard AER process for responding to odour complaints. In response to

local residents' concerns, beginning in 2016 the AER will be placing a field inspector in Peace River to enhance the investigative process and ensure a timely response to odour concerns in the area.

Christina Winarski, manager of Enforcement and Surveillance at the Slave Lake Field Centre, encourages people to call the AER when they smell an odour. "We rely on residents in the area to inform us if something is wrong," she says. "This is an additional tool that our inspectors use to discover and resolve any odour issues, supplementing the strategic and focused surveillance program that we have developed for the Peace River area."

Over the past two years, the AER has made many changes to regulations and stakeholder engagement in the Peace River area to address residents' concerns about the odours. These changes were based on recommendations made following a three-week proceeding in early 2014 where stakeholders provided their views to an independent panel of hearing commissioners.

Since the proceeding, the AER has increased communication with local residents in the area and inspect oil and gas facilities more often. In addition, the AER has created stringent new rules to control gas odours emitted from operations in the area. Winarski says that “if we conduct inspections or see trends in air monitoring data and find facilities not in compliance with regulations, enforcement action is taken. Enforcement action can include ordering repairs, either immediately or within a specific timeframe, or even shutting down facilities.”

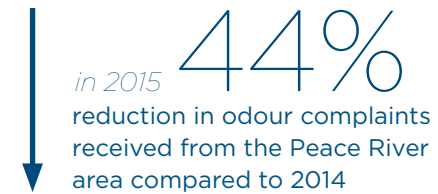
To measure progress and identify potential issues in how industry is meeting our requirements, a performance dashboard on the Taking Action in Peace

River webpage shows exactly how industry is doing in its efforts to reduce hydrocarbon **emissions**. For example, it can be seen that there was zero gas vented in the Reno area in 2015, contributing to an overall decrease in venting in the Peace River area. The information on the Peace River performance dashboard comes from a variety of sources, including inspection results, odour complaints reported to the AER, and reporting from industry.

Moving forward, the AER will continue to work with Peace River area residents to ensure that companies continue to comply with the rules.

TO MEASURE PROGRESS AND IDENTIFY POTENTIAL ISSUES IN HOW INDUSTRY IS MEETING OUR REQUIREMENTS, A PERFORMANCE DASHBOARD ON THE TAKING ACTION IN PEACE RIVER WEBPAGE SHOWS EXACTLY HOW INDUSTRY IS DOING IN ITS EFFORTS TO REDUCE HYDROCARBON EMISSIONS.

ODOUR COMPLAINTS



building bridges with Albertans through ADR

ADR RESOLUTION RATE

*past
12 years* 80-
95%

Swiss psychologist Carl Jung once said that the most intense conflicts, if overcome, leave behind a sense of security and calm that is not easily disturbed.

That's why alternative dispute resolution (ADR) has become such an important tool for the AER and its stakeholders.

ADR refers to alternate means of resolving disputes outside of a hearing or a courtroom. It's an umbrella term that includes negotiation, mediation, facilitation, arbitration, and conciliation. Interest-based mediation is the approach commonly used at the AER and it brings parties together to communicate, understand the issues behind a dispute, and work

together to come up with a mutually acceptable resolution, while maintaining a good relationship.

ADR was developed to help people resolve disputes—in this case, disputes related to energy development and activity. ADR can be used at any stage in the regulatory process: prior to companies submitting an application to the AER, during the application review process, when a file is referred to the hearing commissioners for a hearing, or when reclamation or operational concerns arise.

Parties may choose direct negotiation, mediation or facilitation with AER mediators, or enlist the service of independent third-party mediators. The mediator ensures all parties are heard and all points of view are considered, helping to create collaborative, mutually acceptable solutions, no matter how complex the topic might be.

"In 2015, we saw a rise in ADR with municipalities and disputes involving three or more parties," said Anna Rose, ADR practice lead with the Alberta Stakeholder Engagement branch. "These files tend to take weeks or months rather than days to resolve; emerging issues include water usage, **hydraulic fracturing**, proximity to communities, and excessive noise."



The following principles apply to all mediation conducted by AER staff mediators and hearing commissioners:

- ADR is confidential and without prejudice
- Responsibility for resolution rests primarily with the parties
- Parties are fully informed of the ADR process and their options
- Mediators are impartial
- The procedures are fair to all parties

ADR specialists are found in AER locations across Alberta and in the hearing commissioners' office. They are trained in conflict management; many hold professional designations in mediation, and all adhere to a strict code of ethics.

Collectively, the ADR team has more than a century of experience in dispute resolution and is highly specialized. Over the past 12 years, they have maintained a resolution rate of 80–95 per cent, travelling all over Alberta to resolve disputes in homes, community halls, even restaurants—anywhere the crucial conversations need to take place.

ADR by hearing commissioner is for files referred to the chief hearing commissioner for a hearing. This process provides the option for agreements reached at ADR to form part of the regulatory decision. Hearing commissioners may also conduct evaluative mediation or binding decision making. Parties can use the process to agree on matters for a hearing, such as procedural matters, statements of fact, and expert witnesses. Parties who think their dispute

is destined for a hearing have the opportunity to request ADR by hearing commissioner.

Continuous improvement is also an important part of the ADR program, as we look at new ways to strengthen bonds between our stakeholders, including indigenous communities.

“Our team is currently working on best practices when working with indigenous peoples,” confirmed Rose. “This includes a variety of ADR models such as transformative and narrative mediation and indigenous processes for conflict resolution like sharing circles.”

With a focus on the future, innovative ways to resolve disputes, and important discussions still to be had, ADR will always be a cornerstone of our business.



“THANKS TO THE CAREFUL HANDLING AND CALM DISPOSITION OF OUR ADR REPRESENTATIVE, WE GAINED AN UNDERSTANDING OF BOTH SIDE’S POSITIONS. ADR GUIDED US TO A PLACE WHERE BOTH THE COMPANY AND WE, THE LANDOWNERS, COULD BE CONTENT WITH THE RESOLUTION. WE ARE HAPPY WITH THE RESOLUTION, BUT EXCEEDINGLY HAPPY WITH THE KNOWLEDGE THAT THE ADR TEAM BROUGHT TO THE TABLE.” —ROY AND MELANIE SCHULZE

focus on area-based regulation

What if decisions on oil and gas development addressed the individual needs and concerns of an area? What if residents in communities collaborated to find solutions to issues?

This is the direction the AER is going over the next few years. It's a new vision for the future that considers the needs of each individual community. "As the regulator, we haven't always done a great job of acknowledging the individual needs of an area or a community beyond those directly affected by an individual activity," says Scott Millar, director for the AER's area-based regulation project.

It's a direction the regulator needs to go, he adds. The way energy resources are developed has changed significantly in the past 20 years. It's no longer the drilling of scattered vertical wells. Development

occurs now on a larger scale, in a project style with larger impacts like multiple wells and infrastructure—like roads, batteries, and pipelines—instead of single wells.

The AER needs to look more closely at how multiple development activities could affect a specific area and at the cumulative effects of those activities over time.

Fortunately, the AER has already done some of the groundwork in shifting how we regulate. In 2014, we launched our **play-based regulation** project in the Fox Creek area of Alberta.

That project looked at how resources would be developed and how that development impacted the land and the community. For example, when a company

applies to drill a well, applications for many other activities, such as building an access road, connecting to a water supply, and building a pipeline, may follow. All of these activities have an impact, and under the play-based regulation pilot, the applications to conduct all of those activities came in as one, so the AER could have a better sense of the big picture.

While this pilot included discussions with interested stakeholders, it focused on generating awareness of the project as a whole. And while stakeholders found the complete project picture helpful, they told the AER that engagement could still be improved.

"We know that residents, indigenous peoples, industry, and other stakeholders have unique concerns, specific to their area," says Millar. "Through area-based regulation, we'll be working with those who



“WE WILL BE ASKING STAKEHOLDERS FOR THEIR HELP TO COME UP WITH SOLUTIONS. IT WILL BE A MUCH MORE COLLABORATIVE PROCESS FOR EVERYONE.”

—SCOTT MILLAR, director for the AER’s area-based regulation project

work and live in an area to come up with solutions, instead of addressing an issue after decisions have been made.

Will the AER get everything right on the first try? Unlikely, admits Millar. That’s why the AER is going to test the concept by conducting a pilot in the Fox Creek area. The community and people have concerns about water use and seismic events in an area of the province with active development.

“It’s a fundamental change for the AER, but also for our stakeholders and our industry,” says Millar. “This evolution is going to take a lot of hard work and commitment on our part over the next few years.

And we will learn from our first pilot and adjust along the way.”

What is the ultimate goal?

Millar hopes that through a collaborative process, stakeholders and the AER will develop meaningful solutions to community-based issues.

The AER needs to look more closely at how multiple development activities could affect a specific area and at the cumulative effects of those activities over time.



animating conversations about the oil sands

The videos offer a solution to the unfamiliarity and confusion about energy development and regulation that many Albertans experience.

You shouldn't have to be an engineer, geologist, seismologist, or biologist to understand what's going on in Alberta's oil sands.

When Albertans asked for clear, straightforward information about oil and gas activity, we realized that we needed to communicate our work from a different perspective. It was time to pool our experts' knowledge and deliver the facts in a more creative and transparent way. Numerous brainstorming sessions later, *Conversations that Matter*, a six-part animated video series, was born.

Conversations that Matter gives Albertans easy-to-understand information about energy development and regulation in their province. Each episode makes sense of a complex, highly technical topic by presenting it in an accessible way; animation, plain language, candid storytelling, and relatable characters

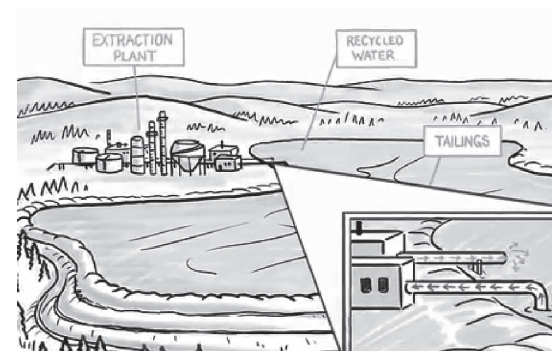
help break down technical material and industry terms for all audiences to understand.

The videos offer a solution to the unfamiliarity and confusion about energy development and regulation that many Albertans experience. Several studies conducted by the AER over the last decade reveal that Albertans continue to have specific concerns about oil sands development, including safety, environmental protection, and incident response.

With these key areas in mind, 45 industry and subject matter experts worked together to provide credible and objective information in a digestible format. Fran Hein, senior geological advisor, lent her technical expertise to the episode "How Big are the Oil Sands?" She said one of the project's greatest challenges was translating complex terms into more common language.

FIND CONVERSATIONS THAT MATTER AT

www.youtube.com/ABEnergyRegulator



“Moving away from the specialized language we use among our colleagues was difficult,” explained Hein. “Initially, I thought animation would make the videos seem less scientific and would make them lose meaning. But it’s part of our mandate to inform the public. As scientists, we should be able to communicate with those who don’t have that background.”

“As things came together, I realized the animation and plain language makes the subject matter more approachable, to the point where Albertans can actually identify with the characters and their level of understanding.”

By reducing technical language and adopting an Albertans-first approach, *Conversations that Matter* invites anyone to become aware of and learn more

about energy regulation. Each video then becomes a tool that Albertans can use to assess the AER’s work and be able to hold us accountable for it.

“It’s a rewarding experience, to effectively deliver the same, transparent information to everyone regardless of their background knowledge,” said Hein.

This kind of approach is new and unconventional, and it’s working.

Since its official release in October 2015, *Conversations that Matter* has been viewed almost 60 000 times on YouTube and has been shown at conferences, trade shows, and other events worldwide.

But the conversation’s not over yet: we’re now looking to expand the series to inform Albertans on topics like hydraulic fracturing. And as long as Albertans have questions, the AER will continue to answer them in innovative ways.

Conversations that Matter can be viewed on YouTube.

‘WE WORK IN ONE OF THE MOST STRINGENT REGULATORY ENVIRONMENTS
IN THE WORLD, AND THE AER’S DAM SAFETY PROGRAM REFLECTS THAT.
WE RESPECT THE GUIDANCE PROVIDED AND UNDERSTAND THE PROGRAM
IS PUTTING SAFEGUARDS IN PLACE TO ENSURE ALL DAMS IN ALBERTA ARE
MAINTAINED IN A SAFE AND EFFECTIVE MANNER.’ —SUNCOR



DAM INSPECTIONS

November 2015
the AER inspected



55
oil sands
operations

31
coal mines

14
oil and gas
operations



only 1
significant
deficiency

the AER shores up dam safety

When you're tasked with protecting dams related to oil and gas development, the last thing you want to do is hold back, especially when you're trying to hold *everything* back.

So when the Auditor General of Alberta asked for the creation of a new dam safety program in 2015, the AER promised it was going to be robust, efficient, and relevant for the future.

The report recommended that a reliable registry of dams be maintained, risks and consequences of dam failure assessed, and regulatory activities reported. It also requested that deficiencies at containment facilities be corrected or managed immediately. Most of the structures in our jurisdiction hold process fluids and tailings from mining operations, so the impact of a breach or dam failure would be a major concern.

Armed with a series of recommendations, new information, and unwavering determination to meet our standards, the AER was ready to build a watertight dam safety program.

Despite the fact that owners are responsible for the safety of their dams and for complying with regula-

tory requirements, the regulatory oversight was new territory for the AER, so we had to become experts in dam design, construction, and operations.

Once our initial homework was done, we established control measures based on the **full life cycle** of each facility. And then we began assessing risk and building inspection guidelines related to consequence ratings along with operator history and performance.

"The AER's Dam Safety Program addresses higher-risk facilities, like tailings ponds, by applying more regulatory resources to them," explained Santiago Paz, one of the AER's dam safety engineers. "This means more frequent inspections, audits, and performance reporting by dam owners. From a best-practice perspective, higher-risk facilities require higher design standards and a more thorough design review."

With the structure in place to inspect the full spectrum of facilities in our jurisdiction, it was time to put it to the test.

In November 2015, we released our findings from the first series of dam inspections. We focused on signs of potential failure of a structure, including indicators

of potential spillage, slope instability, internal and external erosion, ground settlement, and groundwater contamination.

We sent both geotechnical engineers and general inspectors to ensure specifications in each facility were being properly assessed. If poor performance was discovered during any inspection, we continued to monitor the facility and provided direction to the owner. If a facility was performing well, we scheduled fewer future inspections.

Inspections of structures at 55 oil sands operations, 31 coal mines, and 14 oil and gas operations structures revealed only one significant deficiency.

Although we're happy with the results, we know this is simply the beginning of an important new regulatory function. But with the foundation of our dam safety program now in place, we're confident that we have exceeded the recommendations from the auditor general's report, and we will continue to strengthen the program.

coming together to go further

When energy regulation began in Alberta almost 80 years ago, it looked a lot different than it does today. The regulator had no environmental specialists, hearing commissioners, or engagement experts—they came much later as the organization adapted and evolved. It took decades of experience and research for the AER to become what it is today; it has been a journey of continuous improvement to meet stakeholder needs, and we will continue to evolve in the decades to come.

Our work has drawn the attention of the world. Countries like China, Australia, Mexico, and even other Canadian provinces and territories, including New Brunswick, Nova Scotia, Newfoundland, the Yukon, and the Northwest Territories, all want to learn about the AER's strong regulatory practices and how we protect people, the environment, and the resource.

The last delegation to pass through our doors in 2015 was a group of Mexican officials led by Mexican

Secretary of Energy Pedro Joaquin Coldwell and National Hydrocarbons Commission President Juan Carlos Zepeda Molina. For two days in December, the 11-member delegation participated in a workshop designed by the AER, toured various oil and gas facilities in Alberta, and took in as much as possible about Alberta's oil and gas industry.

The visit, which was co-hosted by the provincial and federal governments and a few oil and gas companies, was considered a success by all, including Cecilia Villanueva Bracho, the Mexican consul general to Alberta. Bracho was very impressed with the program the AER helped put together for the officials and points out that "it is very uncommon for a delegation of this type to come to Canada, which clearly demonstrates trust in the AER."

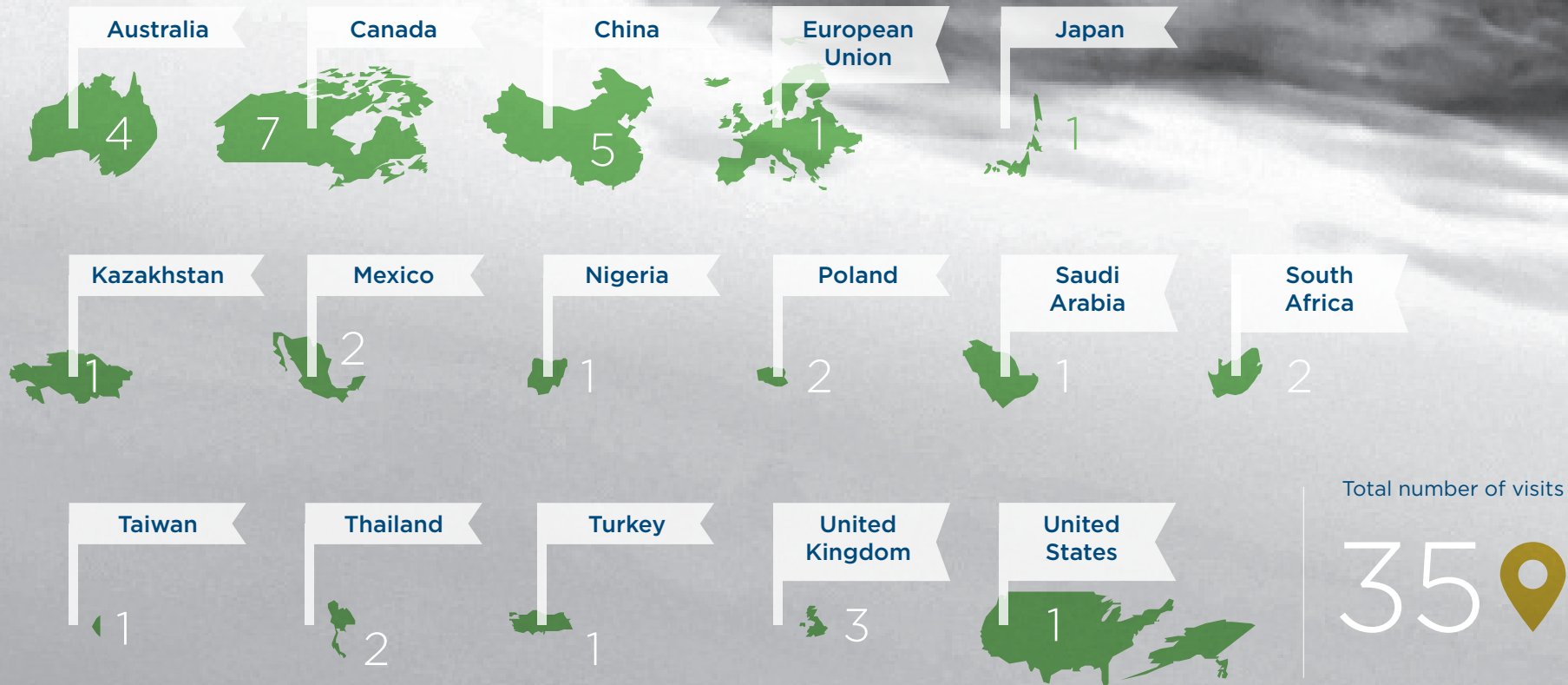
Mexico is one of many countries the AER's National and International Relations Branch works with to tell our story. Last year we met with 35 delegations

from 16 countries. The reason we've dedicated an entire branch to meeting with other countries is best summed up with a popular African proverb: If you want to go fast, go alone. If you want to go far, go together.

Any marathon runner will tell you that the key to endurance and strength is having the right people along the way to give you the support needed to make it to the finish line. By reaching out to others who share the same goals, understand our challenges, and are interested in strengthening their own regulations, we are building a support base that will give us the ability to go the distance for Albertans.

Telling the Alberta story far and wide helps it be understood, but it also helps to strengthen our own practices. With every meeting we have, we learn a little more about ourselves and our story, we expand our network of knowledge and expertise, and we go further in our journey to excellence.

Countries visiting the AER

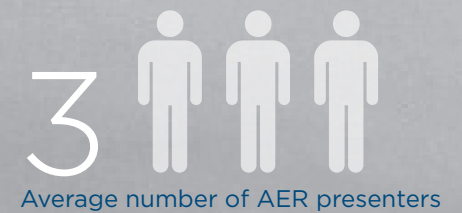


SHARING ALBERTA'S STORY - DELEGATIONS



Top 3 topics of interest

1. AER overview/our regulatory framework
2. Shale gas
3. Hydraulic fracturing



leader of the pack

Rondine Cabot, a 10 year veteran of the AER's inspection team, drops her four-year-old daughter off at daycare and climbs into her pickup to begin her commute to work. But today's drive isn't into her office in Edmonton; she'll be driving for three hours this morning to check on a high-risk sour gas facility near Fox Creek and an indigenous reserve.

Two days earlier, Rondine began her intensive investigation into the facility by checking Government of Alberta software programs to understand the full scope of the operation. She checked the company's *Water Act* approval to identify the company's maximum withdrawal rate so she could verify it during the inspection and checked for any environmental protection conditions the company must meet above and beyond the standard requirements.

She also combed through old records to see where the energy operator had been deficient in the past, if there had been any complaints from the public about it, and how they'd fixed those problems.

Those old inspection and complaint records are kept in an AER software program that details every piece of energy infrastructure in the province, whether it's

an **abandoned well** or pipeline or a currently operating facility. The program also helps Rondine and the other AER inspectors focus on the wells, pipelines, mines, and facilities that pose the greatest threat to Albertans or the environment. The program identified this facility as high risk because it processes a high concentration of lethal sour gas.



“We look at everything,” she said. “We start with anything that may affect public safety and go from there.”

As Rondine makes her way northwest, she considers her plan of action for inspecting the site. The most important thing she'll look for: that the company has measures in place to protect the public and environment if something goes wrong.

“When I first get to a site, I look at the signage so the public can call them to respond if there's an emergency,” Rondine said. “People need to know whose facility it is without having to go on the site.”

Rondine pulls off the highway onto gravel roads toward the facility, knowing that although she's here to inspect the facility, if there's an oil and gas emergency nearby, she'll be responding to that instead. She needs to be able to react at a moment's notice to energy incidents.

“If there's an emergency, the first thing we do is make sure the operator has enacted their emergency response plan. But we always send the person that's closest to respond.”

And sometimes that means helping out other field offices if the emergency is near the office boundaries.

“We have the flexibility to go where we see the need,” she added.

Thankfully, major incidents in the energy industry are rare; there were just four well blowouts and 1.17 pipeline spills for every 1000 km of pipeline in the province in 2015. And on this day, Rondine makes it to the sour gas facility without being called away.

As she inches her way up the rutted, muddy lease road in her pickup, our logo—the shield depicting Alberta’s diverse landscape and bold black letters spelling out Alberta Energy Regulator—is immediately recognizable to the men in blue coveralls and hard hats working at the plant. And as Rondine steps out of her truck in her light grey, AER-branded personal protective equipment; she stands out in stark contrast.

Rondine makes her way to the office on site. The plant manager stands from his desk, shakes her hand, and introduces himself.

“We’re usually received by operators very well,” Rondine says. “There have maybe been two times in my 10 years that I haven’t been.

“WE HAVE THE AUTHORITY TO SHUT A COMPANY DOWN. THERE ARE A LOT OF TOOLS AT OUR DISPOSAL TO MAKE SURE ENERGY COMPANIES FOLLOW THE RULES: WARNINGS, MORE INSPECTIONS OF THEIR FACILITIES, FINES, ETC.”

—RONDINE CABOT, AER regional coordinator

“They understand my job isn’t to get people into trouble; it’s to help them find areas where they can improve. Whether it’s because of the impact to the public or environment or because of the cost to clean it up, nobody wants spills to happen.”

So the inspection begins and Rondine has become the leader of the pack.

“They usually like to walk around the site with us to see what it is we’re looking for; to make sure that they’re following the rules.”

Nearly four hours later, after explaining numerous AER requirements to the operators, Rondine’s inspection is complete. The facility has some minor deficiencies, but nothing that put the public at risk. Rondine will have to check in on them again soon to make sure they’ve been fixed.

And if it’s not?

“We have the authority to shut a company down. There are a lot of tools at our disposal to make sure energy companies follow the rules: warnings, more inspections of their facilities, fines, etc.”

“But one of the most effective ways is to shut them in. If they can’t produce, they can’t make any money. And that’s a big incentive to follow the rules.”

Rondine’s story represents one of the 11 216 inspections the AER conducted in fiscal 2015/16. AER staff wield significant power when it comes to ensuring Alberta’s energy industry follows the rules, and industry personnel recognize that.

Big-Picture Thinking

As Alberta's energy regulator, it's our job to make sure that energy development occurs in an environmentally responsible manner. One way we can do this is by adopting a cumulative effects management approach.

What are cumulative effects?

Cumulative effects can be defined differently depending on who you talk to, but to the AER, they are the total environmental changes caused by energy development activities in combination with other past, present, and future human actions. The impacts of each activity may be insignificant by themselves, but when they're combined with the impacts from other activities, the risk to the environment can be great.

The regulatory system that we have in place today was designed during a different period of energy development and tends to look more at each development activity in isolation, rather than looking at all of the activities occurring in the area and their impacts on water, land, biodiversity, and air quality. However, with the amount of energy development now occurring across the province, we need to shift our thinking and adopt a cumulative effects management approach to ensure that when we're making decisions on energy development, we're looking at the bigger picture, seeing the context of all activities that impact the environment.

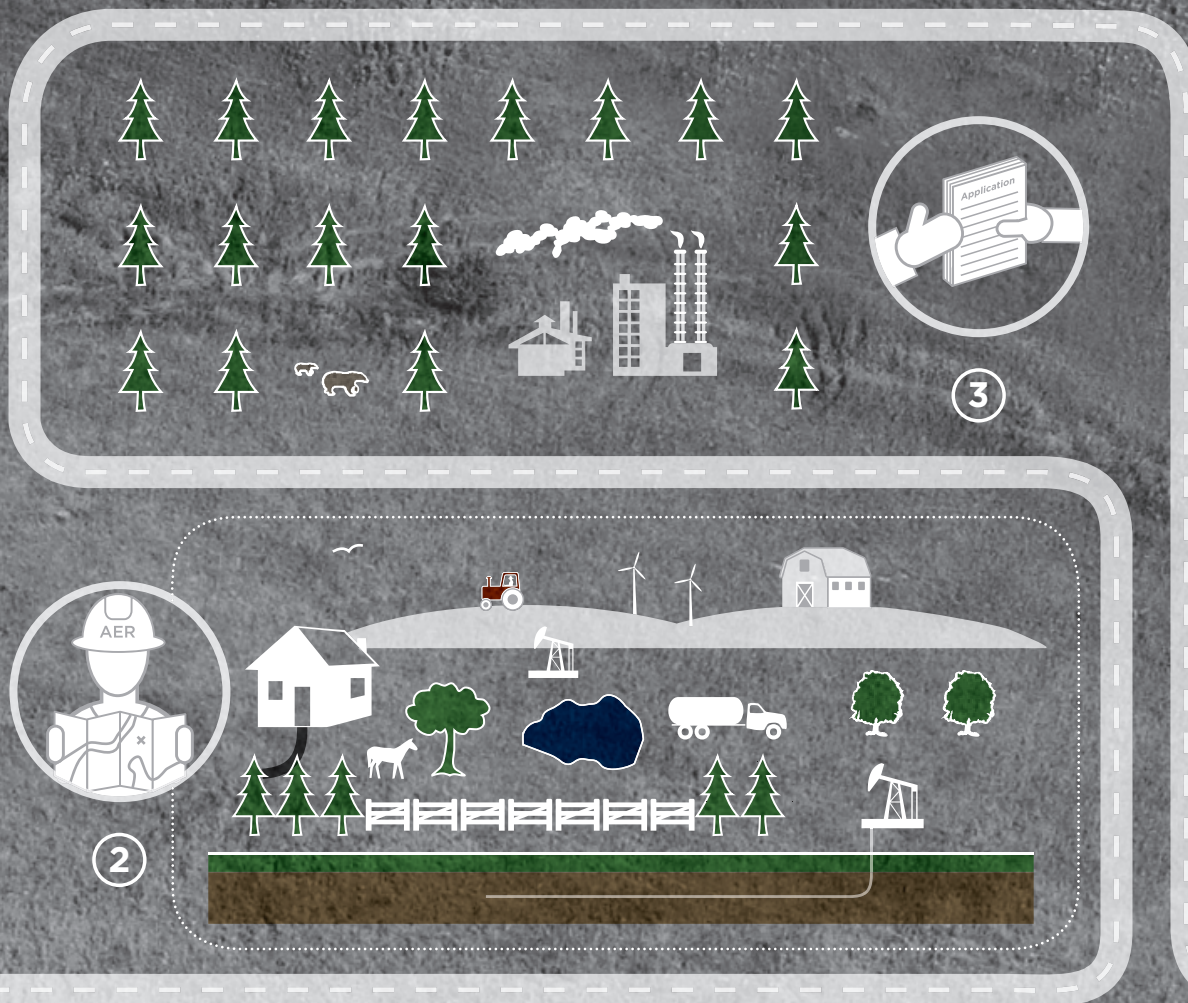
Adopting a cumulative effects management approach is no easy feat and will take some time to get right. We'll need to work closely with other government agencies that are responsible for setting policy and also responsible for environmental protection. It also requires proper planning and testing of different approaches. That's why, over the next year, we will undertake a number of initiatives—outlined here—to start building a cumulative effects management approach.



① THE BLUEPRINT

As a first step, we developed a cumulative effects management blueprint that maps out how we can make decisions that better consider cumulative effects on the environment, and how the AER can work with our partners to implement the approach. We tested the approach on a small scale last year in central Alberta. We received water allocation requests for five energy development projects and assessed the applications against interim water-use

thresholds that the government had set based on flow rates in the rivers where the projects were proposed. This exercise allowed us to better understand how such requests cumulatively affected water availability, which in turn allowed us to make a more informed decision about each project application. We will continue to refine the approach with our partners as government develops additional thresholds for air, water, land, and biodiversity.



② AREA-BASED REGULATION

Cumulative effects need to be considered at every stage of the regulatory process—from application, to decision, through to project closure—and we need a regulatory approach that looks at energy development within an entire area, including subsurface reserves, as opposed to project-by-project. As a result, we will be piloting an area-based regulatory approach that will give us a better understanding of the impacts of energy development and will consider the environment relative to government thresholds. For more information about ABR, see page 18.

③ SINGLE, INTEGRATED APPLICATIONS

Last year, the AER began testing a single, integrated application approach that allows energy companies to submit one application for all activities of an energy development project, rather than submitting separate applications for each activity. This process allows us to see the full scope of the project and better assess cumulative effects while being far more efficient and effective as a regulator.

④ ACCOUNTABILITY

Cumulative effects management also means ensuring industry is accountable for its actions. As a result, we're developing environmental performance metrics to help us assess industry's actions against thresholds established by government. Measuring performance will also give us the insight we need to refine our regulatory approach to ensure we're successfully managing cumulative effects. Linking industry performance with environmental performance is the key to success, and they need to work in tandem to achieve positive results.



why less is sometimes more

We've examined our regulatory model to identify and improve AER requirements, focusing on targeted changes with quick and meaningful results.

Stacking rule upon rule seems like a good way to ensure public safety and protect the environment. After all, shouldn't more rules bring about better behaviour?

Thing is, technologies evolve and new types of resource plays emerge, which means the rules established years ago may no longer fit, or they may fail to address new risks altogether. Applying requirements that are outdated or duplicated or that fail to adapt to emerging industry trends can make the AER an ineffective and inefficient regulator and place undue economic strain on companies.

We've examined our regulatory model to identify and improve AER requirements, focusing on targeted changes with quick and meaningful results.

Kim Eastlick leads the **Near-Term Action Program (NTAP)**, which is finding ways to make the regulatory

system more effective and efficient through targeted, timely improvements. He took time to answer some questions.

Is the AER doing this just because oil and gas prices are low?

No, the AER's work to make our regulations more efficient started in April 2014, well before the current downturn in energy prices. Our efforts to make the regulatory system more efficient are part of a bigger strategy to improve how we regulate.

Don't more regulations make for a safer province?

Regulating with obsolete or ineffective requirements doesn't mean we're any safer. In fact it can tie up resources on issues that are not significant and hinder regulatory action where the risks are greater. Our top priority remains protecting the public and the environment, and any regulatory changes we're making either do not impact or actually enhance protection.



Can you give a specific example of a regulatory change?

A good example of changes that brought about significant results at no risk to public safety or the environment is what we've done to *Directive 017: Measurement Requirements for Oil and Gas Operations*. We responded to advances in oil and gas measurement technology by revising requirements in this directive to make them more relevant. The changes to *Directive 017* will also result in estimated annual savings of over \$200 million for industry.

How has the program benefited industry; what results have you seen?

There are three main benefits to industry from this program: lower operating costs, lower capital costs, and fewer regulatory delays that allow companies to bring projects into operation faster, which in turn provides economic benefits.

We estimate that in fiscal 2015/16 alone, this program is delivering around \$400 million of annual savings for industry.

It sounds like a great deal for the companies, but what do Albertans get from it?

By simplifying and integrating requirements, we've improved both the relevance and quality of information that companies report to us, which helps us better monitor whether they're complying with the conditions set out in environmental approvals.

The changes we are making to ensure regulation is relevant, efficient, and timely not only protect the environment and public safety, but also enable industry to improve its cost competitiveness and contribute more to Alberta's economy in terms of royalty payments, taxes, and jobs.

The AER talks a lot about regulatory excellence. Does this fit in somehow?

Absolutely it does. First, ensuring that companies are not facing needless regulatory burden is part of being an excellent regulator.

Second, an excellent regulator listens to feedback and actively seeks out and addresses outdated requirements. One of the attributes the AER identified for regulatory excellence was "stellar competence," which means that we have the necessary expertise to do our jobs well. Through NTAP, the AER's experienced technical and regulatory specialists lead young, enthusiastic, and innovative staff to not only deliver better requirements, but also to develop future leaders.



learning why the earth moves in Fox Creek

Residents of Fox Creek felt the ground tremble on January 12, 2016. The reason: a 4.8 magnitude (M_L) earthquake just 35 km from the northern Alberta town.

The quake was the fourth over 4 M_L to shake the area in the past year, all linked to hydraulic fracturing in a province that, traditionally, has been relatively quiet on the earthquake front.

When it hit, seismologists at the AER's Alberta Geological Survey Branch (AGS) were assessing data from previous earthquakes in the Fox Creek area as part of a formal study into "induced seismicity," earthquakes that are triggered by human activity. The latest earthquake would provide them with even more data to analyze.

The AGS is using data from more than 53 monitors that measure seismic activity across the province,

and the January event showed up on monitors almost immediately.

The activity also caught the attention of area residents, the media, and Alberta Premier Rachel Notley, who asked the researchers to provide an interim report this spring. The study's final report is due to be published in November 2016.

"Our initial findings indicate a strong link between geological features in the area, for example faults and ancient fossil reefs, and induced seismicity," said AGS geoscientist Todd Shipman, manager of the Landscape and Geological Hazards Group.

"We need to continue to study the links between hydraulic fracturing operations, geology, and geomechanics and their effects on induced seismicity," said Kristine Haug, AGS geological engineer. "This information will be included in the final report."

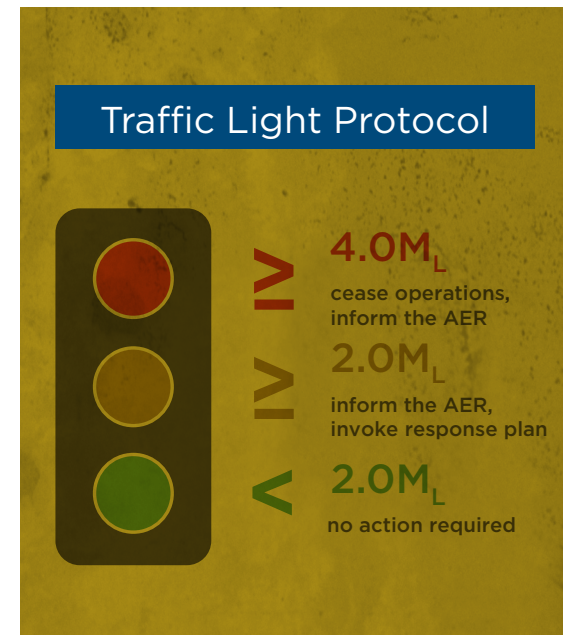
And while none of the earthquakes linked to hydraulic fracturing have caused any impact to infrastructure or the environment, energy operators in the area continue to be bound by AER's *Subsurface Order No. 2* when hydraulically fracturing in the area.

Using a **traffic light protocol**, licensees fracturing in the Duvernay Zone in the Fox Creek area must monitor seismic activity and report any earthquakes within 5 km of their wells during hydraulic fracturing operations. They must also have a response plan and be prepared to apply that plan to any induced seismicity above 2.0 M_L .

If monitoring picks up an earthquake of 4.0 M_L or greater, they must immediately cease operations and report it to the AER. They will not be allowed to resume operations without AER approval.

“WE NEED TO CONTINUE TO STUDY THE LINKS BETWEEN HYDRAULIC FRACTURING OPERATIONS, GEOLOGY, AND GEOMECHANICS AND THEIR EFFECTS ON INDUCED SEISMICITY.”

—KRISTINE HAUG,
AGS geological engineer



protecting Albertans, one oil and gas well at a time

These are difficult times in Alberta, particularly for those that work in the oilpatch and for companies that develop energy resources in Alberta.

With the sharp drop in global oil and gas prices, some companies are finding it more economical to stop producing to save money, or possibly avoid bankruptcy. But this leaves thousands of wells, pipelines, and infrastructure sitting inactive on Alberta's landscape. In tough times, it's vital that the AER is on the job to ensure our rules are followed so that companies, not Albertans, clean up and maintain this infrastructure.

We recognize that in times such as these, we must make certain that Albertans are protected, while ensuring that the companies we regulate face no unnecessary fiscal pressure. Over the past year, we've implemented programs and proposed changes to our requirements to meet this challenge.

INACTIVE WELL COMPLIANCE PROGRAM

Last year, we launched the Inactive Well Compliance Program (IWCP) to address a backlog of 30 000 inactive wells in the province that don't comply with our rules. A well is considered inactive when it has been idle for 6 or 12 months, depending on its type. In the past, we identified inactive wells and

whether or not they met our requirements on a case-by-case basis. Before the IWCP began, we didn't have a full picture of the number of inactive wells across the province.

"The IWCP is supported by a specially designed system that's helped us pinpoint which wells are active, inactive, and suspended. To date, nearly 11 000 wells have been brought into compliance with our suspension requirements," said David Hardie, a senior advisor with the Closure and Liability Branch. "At this rate, we're on track to bring all 30 000 wells in the program into compliance within five years."

DIRECTIVE 013 UPDATE

Operators can take one of three actions to bring inactive wells into compliance with our requirements: reactivate it, suspend it indefinitely, or permanently abandon the well. To suspend a well, operators must do pressure tests and inspections to ensure it's not leaking oil, gas, or other substances, such as **hydrogen sulphide gas**.

Directive 013: Suspension Requirements for Wells outlines our requirements for pressure tests and inspections, among other suspension, monitoring, and reporting requirements. We asked Albertans to provide feedback on proposed changes to *Directive*

013, which includes extending the deadline for operators to complete suspension work and submit the inspection results to us from 60 days to 12 months.

"We believe these changes and the IWCP will allow companies to focus on conducting inspections and pressure tests on multiple inactive wells by region, rather than on a one-on-one basis," said Hardie.

CHANGES TO LICENSEE LIABILITY RATING (LLR) PROGRAM

As part of our commitment to public safety and the environment, we've updated our **Licensee Liability Rating (LLR) Program** to better reflect the costs of abandoning and reclaiming inactive wells and facilities across the province. The program is designed to ensure Albertans do not pay for abandonment and reclamation. For instance, when a company's liabilities are greater than its assets, it must pay us a financial security to cover all abandonment and reclamation costs.

"We require oil and gas companies operating in Alberta to participate in the LLR program. If a company does not pay their financial security, we can take a number of actions against the company which can include issuing orders to companies that require them to suspend or abandon a well," said Hardie.

Despite the program, there are times where companies go bankrupt, leaving no one responsible for making sure the company's wells are abandoned and reclaimed. When this happens, we consider these wells orphaned, and they fall under the care and custody of the Orphan Well Association (OWA).

Serving as a last resort, the OWA is a nonprofit organization whose role is to manage the abandonment and reclamation of orphaned wells, facilities, and pipelines across the province. The OWA is funded by an annual levy collected by the AER from industry on its behalf.

"The work of the AER and the OWA in identifying orphan facilities such as wells and pipelines, and ensuring they are abandoned and reclaimed properly, is highly complementary," said Brad Herald, OWA chair and vice-president of the Canadian Association of Petroleum Producers.

"The AER and the OWA work together to ensure the public is protected and that orphan sites are abandoned and reclaimed in an environmentally responsible manner."

“ THE WORK OF THE AER AND THE OWA
IN IDENTIFYING ORPHAN FACILITIES
SUCH AS WELLS AND PIPELINES, AND
ENSURING THEY ARE ABANDONED
AND RECLAIMED PROPERLY, IS HIGHLY
COMPLEMENTARY. ”

INACTIVE WELL

A well that is no longer being used to produce oil or gas, inject fluids, or dispose waste after 6 or 12 months, depending on the well's class.

SUSPENDED WELL

A well that is no longer being used to produce oil or gas, inject fluids, or dispose waste and meets requirements set out in *Directive 013*. A suspended well can be put back into production or moved to the next life-cycle phase—abandonment.

ABANDONED WELL

Abandoned wells are permanently plugged with cement, cut at least one metre below the surface, and are covered with a vented cap atop the well. Abandoned wells cannot be seen from the surface once the land around it has been reclaimed.

2015/16 REPORTING ON OUR RESULTS

To become an excellent regulator and to deliver on the priorities set out in our strategic plan, we must achieve results and report on our progress. This means demonstrating how we've ensured public safety and protected the environment, how we've been effective and efficient in ensuring compliance, how we've engaged our stakeholders, and whether Albertans are confident in the AER.

As we developed our strategic plan, we identified performance measures and targets that align with our priorities; these are guideposts to help the AER define success and demonstrate the results of our actions.

Our 2014-17 strategic plan was designed to help us achieve our vision and address new risks and challenges in energy development. We have learned much about adapting to changes in technology and stakeholder expectations, how to define and achieve regulatory excellence, and how to deliver a strategic plan that allows us to adjust to shifting circumstances.

The AER has come out with a 2016-19 strategic plan that is updated each year and that will ensure we remain adaptable and deliver clear outcomes and measurable results. You can see this new strategic plan on page 52.



PROTECTIVE

Develop an integrated whole-system regulatory approach

OUTCOME

Effective management of public safety and cumulative environmental risks and impacts



EFFECTIVE

Strengthen risk-based regulation

Effective management of resource conservation and minimize financial liability on Albertans



EFFICIENT

Transform Alberta's energy regulatory system to improve efficiency

The regulatory system is efficient, minimizing duplication, with highly efficient processes, and only intervening to the level necessary



CREDIBLE

Increase trust and confidence in how energy is developed in Alberta

Stakeholders are confident about how energy is developed in Alberta

MEASURE	TARGET	STATUS
Volume of all water (fresh, saline, and recycled) used for oil, oil sands, and gas operations	Work with Government of Alberta (GoA) to set benchmarks and requirements for reduction of water use for energy resource development	In progress: Consolidated water data and compiled hydraulic fracturing and in situ oil sands volumes as part of a multiyear program.
	Reduce overall tailings	In progress: Drafted <i>Directive 085</i> and gathered industry feedback to establish standards.
Volume of gas flared and vented from oil and gas operations	Flaring levels are within provincial guidelines	Target met: We continue to monitor flaring levels and focus on venting compliance.
	AER expertise is provided to support the GoA's Integrated Resource Management System (IRMS)	Target met: Multiple deliverables completed/ongoing to support IRMS.
Proportion of inactive wells that meet current suspension requirements	100% of high-risk inactive wells meet AER suspension requirements	Target met: All high-risk, inactive wells were compliant by August 2015. Monitoring continues.
Adoption of risk-based regulation to respond to changes in technology and complexity in oil sands development	No unintended loss of reservoir containment	Target met: Reservoir containment restrictions incorporated in regulatory decisions.
Number of incidents per kilometre of pipelines regulated by the AER	Pipeline incident rate reduced by 4%	Target met: Pipeline incident rate reduced by 27.78% (1.17 per 1000 km).
Regulatory process efficiencies	\$400 million in cost savings from efficiency initiatives in 2015	Target met: \$411-\$448 million in savings through Near-Term Action Plan and other efficiency initiatives.
Relevant regulatory requirements	Complete a full regulatory review to identify and execute opportunities for consolidation and simplification	On hold: Ongoing reviews and implementation of improvement opportunities.
Improve efficiency of AER application decisions	Establish final New Activity Life-Cycle Approach (NALA) blueprint to be approved by June 30, 2015	Target met: NALA implementation charter approved in 2015.
Percentage of Albertans confident that oil and gas development is occurring responsibly	10% increase in awareness of the AER and its role in regulating energy development in Alberta	Target met: Awareness of the regulator increased from 41% in 2014 to 50% in 2015 as reported in the AER Survey of Albertans and Stakeholders.*
Stakeholder rating of AER performance in key areas of concern	10% increase in positive perceptions/rankings of AER performance	Ongoing: 82% (an increase of 6.4%) of Albertans report confidence in the regulator's ability to fulfil our mandate. Stakeholders reported confidence rates at 77% (an increase of 4%); however, these rankings varied amongst specific stakeholder groups.*
Recommendations for best-in-class performance are developed through stakeholder collaboration	Completion and release of recommendations in 2015	Target met: Penn Program on Regulation's final framework for regulatory excellence released and stakeholder feedback gathered in fall of 2015.
Highly skilled and engaged employees	Establish a baseline in 2015, with an increase in the rating in 2016	Target met: 2015 employee engagement survey completed with 81% response rate.

* Numbers tied to 2017 target.

A blue-tinted photograph of a mountain range reflected in a calm lake. The mountains are rugged and rocky, with some snow patches visible. The lake is still, creating a clear reflection of the mountains. The overall mood is serene and majestic.

ACHIEVING
EXCELLENCE
IN ENERGY
REGULATION ›

REGULATION
IN ENERGY
EXCELLENCE
ACHIEVING

our path to excellence

From the time the AER was created, our vision was to achieve excellence, to strengthen and improve Alberta's regulatory system.

To accomplish this, we knew we had to define what excellence meant. We also knew we'd need help making it happen.

In November 2014, we turned to the experts at the internationally renowned University of Pennsylvania's Program on Regulation (PPR) to help identify the key attributes of an excellent regulator, understand how the AER can adopt these attributes, and measure our progress. The excellence initiative generated a significant amount of work. The PPR delivered 6 core research papers, 15 expert papers, and an interim report that generated international discussions on this notion of regulatory excellence.

At the same time, we wanted to ensure that any model we adopted reflected the unique values and expectations of the people who live and work in Alberta. For this, we tapped into the knowledge of Albertans, indigenous peoples, and our diverse stakeholders through a series of dialogues hosted by PPR in the spring of 2015.

These sessions were not stakeholder consultations but opportunities to share our common vision for

Alberta and discuss how we work together to develop our energy resources in a manner that is safe, environmentally responsible, and respectful of all viewpoints. This approach allowed us to learn from academics and experts in the field of regulation while understanding what excellence means to Albertans.

We aren't the first organization to state our intent to be "excellent," nor are we the first to engage experts to help us define what that is. However, we wanted to do more than an internal assessment of our work; we wanted to show leadership and invest in a universal model, one that could be shared with regulators the world over.

In fall 2015, the final, peer-reviewed report was released, entitled *Listening, Learning, and Leading: A Framework for Regulatory Excellence*.

The report identified three core attributes of an excellent regulator—empathic engagement, utmost integrity, and stellar competence—and presented a model of regulatory organization, action, and performance.

While we had begun to identify how the report's findings could be applied in Alberta, we knew that we needed to continue to seek input on our path to excellence. Using the information we gathered from

MADE-IN-ALBERTA EXCELLENCE

2014 November
University of Pennsylvania's Program on Regulation (PPR) consulted



6 research papers
15 expert papers
1 interim report

2015 Spring
dialogues were hosted by PPR

2015 Fall
final report released

Attributes for Excellence

For the AER, **UTMOST INTEGRITY** means that we are accountable as a protective, effective, efficient, and credible energy regulator that is fair and unbiased. The AER adheres to Alberta government policy and takes a leadership role in identifying policy gaps where they exist. We make evidence-based decisions that consider the environment, the unique nature of the energy development, traditional knowledge, and information brought forward by local communities.

STELLAR COMPETENCE means our people have the required expertise and the necessary tools to carry out their responsibilities, which underpins the AER's ability to achieve its outcomes while adapting to new risks and opportunities. We will seek expertise and information outside of our organization to make well-informed decisions. In this way, we are able to deliver outcomes, measure and report on our performance, and continuously improve.

The AER is committed to respectful external and internal engagement. For us, **EMPATHIC ENGAGEMENT** means working together so that we can make fully informed decisions and build strong relationships. We are straightforward about the issues, listen carefully, respond respectfully, and ensure our decisions are understood. We know that to build and maintain relationships, we must be fair, inclusive, and transparent.



previous dialogues and research, we continued our conversation with Albertans, indigenous peoples, stakeholders, and AER employees. We wanted to test our own understanding, make sure we got it right, and develop a made-in-Alberta version of this framework for regulatory excellence. We asked for honest feedback on how we were performing against the excellence framework and where we could improve.

People overwhelmingly supported the model and provided an honest assessment of our priorities, gaps, and performance. We learned that we can

- be more open and transparent;
- better explain how decisions are made and the reasons for our decisions;
- improve our relationships with Albertans, indigenous peoples, and stakeholders;
- clarify our internal processes and priorities, including employee roles and responsibilities; and
- ensure that our employees have the skills and tools they need to carry out their responsibilities.

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WHAT IS EMPATHIC ENGAGEMENT?

DICTIONARIES DEFINE EMPATHIC AS SHOWING UNDERSTANDING AND SHARING ANOTHER PERSON'S EXPERIENCES AND EMOTIONS. THROUGH EMPATHIC ENGAGEMENT, THE AER WANTS TO WORK TOGETHER WITH OUR STAKEHOLDERS AND OTHERS SO WE CAN MAKE FULLY INFORMED DECISIONS AND BUILD STRONG RELATIONSHIPS. WE PRACTICE EMPATHY BY BEING STRAIGHTFORWARD ABOUT THE ISSUES, LISTENING CAREFULLY, RESPONDING RESPECTFULLY, AND ENSURING THAT OUR DECISIONS ARE UNDERSTOOD.

We learned that there are areas where the model needed to adapt to our specific circumstances; we heard that we must measure our performance and deliver on key outcomes to be successful.

Our final model provides us with clear definitions for utmost integrity, empathic engagement, and stellar competence—the three core attributes. It shows how we can put those attributes into action as we adopt consistent processes, build a strong culture, engage our stakeholders, and make decisions informed by risk. This, in turn, allows us to drive industry to pro-

tect public safety and the environment, while still securing economic benefits.

With the attributes for regulatory excellence defined and a model clearly developed, we now begin to turn our aspiration for regulatory excellence into tangible actions. By establishing clear outcomes, a comprehensive strategic plan, and detailed work plans, and by committing to measuring and reporting on our performance, we will continue to work with Albertans, indigenous peoples, stakeholders, our employees, and the international community to embody regulatory excellence in all that we do.

From the outset, this initiative was about more than receiving a title of “excellent”; it was about becoming a regulator that continually improves its work, builds strong relationships, and leads the next era in energy regulation. Excellence is the means of creating a strong, fair, transparent, and inclusive regulator that delivers measurable outcomes for this province.

what I learned about excellence

Tiffany Novotny, director of the Transformation Management Office, shares what she learned from her work on the AER's regulatory excellence project.

Most don't aspire to be average, and no one can be exceptional on their own. The AER is no different—we aspire to excellence, and the way we achieve that is by working together.



I would like to personally thank Albertans who came together last fall to weigh in on our model for regulatory excellence.

More than 1500 people across the province, both inside and outside our doors, rated the AER's approach to the Penn Program on Regulation's general framework for excellence, ranked our current performance against that approach, and shared their top priorities.

What I am personally most proud of is how we worked together, respected what each person brought to the table, and truly listened to ensure we had a holistic view of what regulatory excellence is.

I certainly had a great time being a part of this initiative, and I'd like to share a few lessons I learned along the way:

There are many ways to involve people – a new digital age means new expectations for engagement. Through workbooks, an online engagement tool, social media, a web survey, and face-to-face conversations across the province, we cast a broad net to hear from diverse groups of people (including our

employees, indigenous peoples, landowners, communities, industry, nongovernment organizations, the Government of Alberta, synergy groups, national and international regulators, academic institutions, and more).

Vulnerability is powerful – we knew we could not simply declare ourselves “excellent” through this work; to understand what regulatory excellence meant we needed help. This means admitting we're not perfect and asking others where and how to improve. Asking allowed us to collectively define regulatory excellence and develop a model that we can continually measure ourselves against.

Listening says more – we had to set aside an old belief that top executives had to unilaterally set strategic direction. Through this initiative, we evaluated more than 20 research reports written by academic powerhouses from around the globe and listened to more than 1500 people. We can confidently say that we have learned by including the public and our employees in creating our path forward.

We have to walk the talk – once you put the questions out there and you get answers, you need to

do something. We embraced the recommendations from the Penn Program on Regulation, and through the *What We Heard* report, we showed how the data we collected helped shape our model for regulatory excellence. The information we gathered helped drive tough decisions about gaps, priorities, and next steps.

As we embark on the next phase of our journey, the proof will be in how we embody excellence in all that we do.

As you can imagine, the process was both humbling and immensely valuable. We still have a lot of work to do, and now we have a model that we built together to help us get there.



“ALL STAKEHOLDERS WANT TO SEE THEMSELVES REFLECTED IN THE SYSTEM, AND I WAS EXCITED TO BE INVOLVED IN THE REGULATORY EXCELLENCE PROCESS AND HAVE AN OPPORTUNITY TO REDEFINE HOW THE REGULATOR CONDUCTS BUSINESS. THE ENTIRE PROCESS WAS VERY VALUABLE.”

—GRAHAM GILCHRIST, a surface rights agent
and a member of the AER’s multistakeholder
engagement advisory committee

MOVING
FORWARD ›
MOVING
WORKING



a world-class resource

Alberta's energy resource reserves are among the world's largest and include bitumen, crude oil, natural gas, natural gas liquids, and coal.

Topping this list is bitumen from the province's oil sands deposits, with **remaining established reserves** at 165 billion barrels in 2015, truly a world-class resource. To put things in perspective, 11 billion barrels of bitumen have been extracted since the late 1960s.

At 923 million barrels (or 2.5 million barrels per day), raw crude bitumen production accounted for 83 per cent of Alberta's total crude oil and bitumen production in 2015. Bitumen production in 2015 increased by 12 per cent for mining projects and by 8 per cent for in situ projects, resulting in an overall raw bitumen production increase of about 10 per cent over 2014.

Of the total bitumen production, 44.6 per cent was used as feedstock for upgraders, yielding 976 thousand barrels per day of upgraded production. Alberta refineries processed 301 thousand barrels per day of upgraded bitumen and 25 thousand barrels per day of nonupgraded bitumen.

In Alberta, crude oil production decreased by 11 per cent in 2015. Conventional natural gas reserves were

29 trillion cubic feet (Tcf) in 2015, while total production was 3.6 Tcf. Natural gas liquids (NGLs) production increased by 5 per cent in 2015.

In 2015, our remaining established reserves of coal remained unchanged at 37 billion tons, while only 30 million tons of marketable coal was produced.

A study conducted by the regulator in 2012 estimated that the hydrocarbon resources from shale are estimated to be a very large and important potential energy supply for Alberta and the world. Best estimates put the in-place resource at 3424 Tcf of gas, 58.6 billion barrels of NGLs, and 423.6 billion barrels of crude oil.

Alberta's energy resources significantly contribute to both Alberta's and Canada's economies. In 2015, the value of our energy resource production was \$67 billion. Amid the current low crude oil and natural gas price environment, the contribution of energy resources to Alberta's economy is expected to be lower in 2016. However, the AER forecasts that after 2016, the value of energy commodities will rebound to higher levels with the return of stronger oil and natural gas prices.

ALBERTA'S RESOURCES (2015)

67 ^{billion}
Cdn
\$
value of production
in Alberta

165 ^{billion}
bbls
remaining established
bitumen reserves

923 ^{million}
bbls = 83%
raw crude bitumen
production
Alberta's total crude oil
& bitumen production

29 ^{Tcf}
conventional natural
gas reserves
3.6 ^{Tcf}
total conventional
natural gas production

drivers for change

We know that our stakeholders play a crucial role in the regulatory process, and through our work on the Multistakeholder Engagement Advisory Committee and discussions about regulatory excellence, we have learned a great deal about the importance of building stronger relationships and working collaboratively with Albertans, indigenous peoples, and stakeholders.

There's little doubt that the energy development landscape has changed just as the economic reality of persistent low oil prices has impacted the industry we regulate. Regardless of the economics, we must ensure we protect what matters to Albertans—public safety and the environment—while responding to new technologies and challenges.

Change happens rapidly in the energy sector. Consider where we were in 2000: in situ development was just beginning and we had a customer on our southern border thirsty for our crude. Stakeholder concerns were local and usually limited to those directly impacted by development. In a province dominated by conventional oil and gas development, we focused on prescriptive regulatory approaches that addressed known risks and historical issues, and that worked pretty well.

Today in 2016, our biggest customer has become a major energy producer—in 2014 the United States posted the largest production increase on the planet and reduced its demand for imported oil. Oil prices continue to slump as demand declines while the global community questions the use of fossil fuels and demands action on climate change. Add to that the focus on Alberta's oil sands by news outlets and social media that has thrust us onto the world stage.

Then we have advances in technology, putting multi-stage hydraulic fracturing and in situ development at the forefront as single wells are replaced with large-scale projects that bring new challenges, risks, and opportunities.

If Alberta is to address new technology, meet changing stakeholder expectations, and compete in the global market, we must change how we operate.

When the government brought together three strong regulators to form the AER in 2013, it was about building an entity capable of ensuring public safety, protecting the environment, managing cumulative effects, confronting new risks, and seizing new opportunities.

We've managed the transition well, and we have accomplished much in almost three years. But we must continue to change, seek excellence, and work with Albertans to manage our energy resources today and beyond.

We must ensure Albertans are protected from the environmental and financial consequences of inactive or abandoned wells as companies grapple with the reality of low oil prices, and in some cases face bankruptcy. We must protect our water resources

and minimize the impacts of development on our landscape, all within the policies government sets to manage our land.

And, we must ensure that the AER delivers results on Alberta's Climate Change Action Plan as we work with industry to reduce methane emissions by 45 per cent by 2025.

This work is important to Alberta and the people who live here. Public opinion research conducted in 2016 indicates that awareness of the AER has increased and that Albertans are expressing confidence in the AER's ability to deliver on its mandate. To keep that confidence, we must remain accountable through open, transparent information about our work and our performance. Albertans expect the AER to focus our efforts on public safety, enforcing our rules, and protecting the environment.

We know that our stakeholders play a crucial role in the regulatory process, and through our work on the **Multistakeholder Engagement Advisory Committee** and discussions about regulatory excellence, we have learned a great deal about the importance of building stronger relationships and working collaboratively with Albertans, indigenous peoples, and stakeholders.





an evolution—our 2016–19 strategic plan

The AER has had to adapt to changes in technology and stakeholder expectations, define and achieve regulatory excellence, and deliver a strategic plan that allows us to adapt to shifting circumstances yet keeps us focused on our vision:

The Alberta Energy Regulator is recognized for regulatory excellence, ensuring the safe, environmentally responsible development of energy resources for the benefit of all Albertans.

Regulatory excellence is the overarching vision under which we do all of our work—the day-to-day delivery of our mandate and our focus on a strategic plan that moves us closer to being truly protective, effective, efficient, and credible.

The AER is expected to protect public safety and the environment, while ensuring economic benefits for all Albertans. We have a clear strategy to deliver on our mandate, reach our vision of regulatory excel-

lence, and deliver results for the AER and our many stakeholders.

Protecting Alberta and the people who live here is important work, and the 2016–19 strategic plan helps us identify our key priorities and establish clear performance measures to ensure we stay on track and demonstrate our results. This plan is updated each year and is designed in a way that allows us to respond to new challenges and take advantage of emerging opportunities.

The energy development landscape is changing rapidly, driven by economic circumstances, advances in technology, and changing expectations around environmental protection and managing cumulative effects. The AER understands that we must ensure energy resources are developed

- safely, to protect the public;
- responsibly, to protect the environment; and
- efficiently to manage the costs of regulation.

The strategic plan includes our strategic priorities, strategic and focused outcomes, performance measures, and targets against which the AER and others will monitor our progress and measure our success. It reflects our mandate and helps drive us to our vision by being protective, effective, efficient, and credible.



PROTECTIVE

Develop an integrated whole-system regulatory approach

PROTECTIVE

The first priority of our strategic plan is to be protective: we will protect the public and the environment. Any industrial activity brings some risk; strong and effective rules at every stage of oil sands, oil, gas, and coal development can reduce these risks. Our work will focus on meeting clear targets that result in sustainable water use, improve environmental performance, manage cumulative effects, and address climate change.

- **Sustainable water use** – We'll focus on water use in hydraulic fracturing, enhanced oil recovery, and all oil sands development to ensure that companies are using water responsibly, recycling where possible, and applying technology to use less water. In the first year, we'll begin reporting water use and then track progress in how it's being reduced.
- **Reduce fluid tailings** – In 2015, the Government of Alberta released the *Tailings Management Framework of the Mineable Athabasca Oil*



EFFECTIVE

Strengthen risk-based regulation

Sands to manage fluid tailings volumes from oil sands mining. With a new directive in place, the AER will review companies' plans to ensure they are meeting our requirements to reduce tailings volumes so that the tailings ponds can be fully reclaimed at the end of a mine's life.

- **Climate change** – The Government of Alberta is taking action to address climate change. As part of this plan, the AER will ensure industry reduces methane emissions from oil and gas operations by 45 per cent by 2025 and oil sands operators cap greenhouse gas emissions at 100 megatonnes. We'll start by engaging our many stakeholders and establishing monitoring and tracking systems to better measure progress and report on the results.

EFFECTIVE

To be effective, we must regulate development in a way that reduces risk and ensures Albertans reap the economic rewards of our energy resources. The

AER will continue to apply our risk-based approach, where higher-risk activities receive the greatest attention. This includes focusing on the following:

- **Aging infrastructure** – Decades of oil and gas development has created issues with inactive wells—those that have been suspended or are no longer producing. We'll make sure that companies properly abandon these wells, starting with those that pose the greatest risk.
- **Pipeline safety** – Although the Auditor General of Alberta has reported that Alberta's pipelines are well regulated, more work can be done. We will start by targeting a reduction of high-consequence pipeline incidents by two per cent in 2017.



EFFICIENT

Transform Alberta's energy regulatory system to improve efficiency

EFFICIENT

An efficient regulatory system that ensures safety and environmental requirements can help create a competitive climate that attracts investment. Our efforts to be more efficient are not just about saving money, but also reducing duplication and finding better ways to ensure our requirements are met. We're focusing on the following:

- **Regulatory efficiency and stakeholder savings** – The AER has eliminated outdated requirements and changed our processes to improve our day-to-day operations, which has led to \$400 million in annual savings in regulatory costs. We are making sure that we protect public safety and the environment as we reduce duplication. This year, we'll seek to create an additional \$100 million in annual savings.
- **Improving AER decisions** – We've been seeking new ways to improve our decision making by
 - moving to a single-application approach that provides stakeholders with more information about the full scope of projects;
 - developing requirements that respond to concerns in specific areas of the province; and



CREDIBLE

Increase trust and confidence in how energy is developed in Alberta

CREDIBLE

- moving away from well-by-well, prescriptive requirements to approaches that consider entire projects, ensure stakeholders are engaged, and address cumulative effects.

CREDIBLE

Albertans have told us they seek an energy regulator that protects the public and the environment and that enforces the rules. Reporting on the results of our work and improving how we involve our stakeholders will help us earn and keep public confidence. We will work on the following in 2016/17:

- **Effective engagement** – We will continue to find new ways to involve our stakeholders through initiatives such as our Multistakeholder Engagement Advisory Committee. We will ensure we're on track by measuring Albertans' awareness of, and confidence in, the AER.
- **Pursing regulatory excellence** – After working with Albertans and stakeholders on a model for regulatory excellence that's appropriate for our province, the AER is ready to take further action to make certain we are a regulator that has utmost integrity, stellar competence, and empathic engagement.

Through our Centre of Regulatory Excellence, we will make sure that AER employees have the skills they need to do their jobs well, and we'll continue to build a workplace that engages and motivates employees to excel.

- **Integrated Resource Management System** – As the single regulator for oil, oil sands, natural gas, and coal development, we play a key role in the Government of Alberta's Integrated Resource Management System (IRMS). While the government sets policy direction, the AER ensures that this direction is followed through our regulatory work. This year, we will collaborate with our IRMS partners to support key priorities like managing risks and addressing cumulative effects.

While our strategic plan helps us focus on our key priorities, we know that circumstances can change rapidly. The AER will continue to refine and amend our plan to respond to new challenges and opportunities while making sure we deliver on longer term targets and commitments.

2016–19 STRATEGIC PLAN

The AER is responsible for ensuring that the public and the environment are protected. We have a clear strategy to fulfil our mandate, reach our vision of regulatory excellence, and deliver results for Albertans, indigenous peoples, and our many stakeholders.

To develop our new 2016–19 strategic plan, we examined the work we need to focus on based on our four pillars of protective, effective, efficient, and credible. The plan includes our strategic priorities, outcomes, and performance measures to ensure we stay on track and demonstrate our results.

Ensuring water is used in a sustainable fashion, reducing the inventory of aging infrastructure, lowering methane emissions, making certain pipelines operate safely, and effectively engaging our stakeholders and all Albertans are just a few of the outcomes we will work to achieve in the 2016–19 strategic plan.

We will be updating this plan every year to ensure we can adapt to the changes taking place around us—from new technology to evolving stakeholder expectations—all while demonstrating how the AER's work ensures the safe, environmentally responsible development of Alberta's energy resources.

STRATEGIC PRIORITIES

STRATEGIC OUTCOMES

PROTECTIVE

Develop an integrated whole-system regulatory approach

Effective management of public safety, and cumulative environmental risks and impacts

EFFECTIVE

Strengthen risk-based regulation

Effective management of resource conservation and minimize financial liability on Albertans

EFFICIENT

Transform Alberta's energy regulatory system to improve efficiency

The regulatory system is efficient, minimizing duplication, with highly efficient processes, and only intervening to the level necessary

CREDIBLE

Increase trust and confidence in how energy is developed in Alberta

Stakeholders are confident about how energy is developed in Alberta

FOCUSED OUTCOMES	PERFORMANCE MEASURES	PERFORMANCE TARGETS	VISION
Sustainable water use	Volume of all water used (by source) for hydraulic fracturing, enhanced oil recovery, in situ oil sands, and mineable oil sands	Public reporting of water use by industry	The AER is recognized for regulatory excellence, ensuring the safe, environmentally responsible development of energy resources for the benefit of all Albertans.
Reduce fluid tailings accumulation over mine life	Total annual volume of fluid tailings, treated fluid tailings, fines captured	Ensure industry complies with established performance standards	
Climate change - reduce methane emissions	Volume of methane emissions	Support multistakeholder engagement process to facilitate early action on methane reduction	
Climate change - oil sands emissions	Volume of oil sands emissions	Ensure industry complies with established performance standards	
		Establish a tracking and reporting system for oil sands emissions	
Reduce aging inventory liability	Complete a risk assessment of energy-related infrastructure by March 2018	Address high-risk items as they are identified	
Pipeline safety	Number of high-consequence pipeline incidents	2% reduction in high-consequence pipeline incidents from the previous two-year average	
Regulatory efficiency	Stakeholder savings resulting from reduced regulatory burden that does not negatively impact the environment or public safety	\$100 million in savings to stakeholders in fiscal 2016/17	
	Improve efficiency of AER application decisions	Conduct two pilot projects to evaluate the proof of concept for the single application and approval process by March 31, 2017	
Effective engagement of Albertans, indigenous peoples, and stakeholders	Percentage of Albertans aware of the AER who express confidence in the organization's ability to fulfil its mandate	80% confidence score	
Achieve regulatory excellence	Incorporate key attributes of regulatory excellence	Begin implementing the AER model for regulatory excellence	
	Level of skills and competencies	Address high-priority skill and capability gaps through the implementation of a Centre of Regulatory Excellence in 2016/17	
	Employee engagement	Achieve 83% engagement in 2016/17	
The AER is an integral partner in the Integrated Resource Management System	Percentage of IRMS strategic priorities supported by the AER	100% of IRMS strategic priorities supported by the AER	



OPERATIONAL
OVERVIEWS ›
OVERVIEWS
OPERATIONAL

OPERATIONS DIVISION

The Operations Division is divided into sector and function branches:

- Industry Operations focuses on the resource itself, on working with industry, and on achieving Government of Alberta policy outcomes. Industry Operations includes four sectors:
 - Oil and Gas (conventional, unconventional, geothermal, and other infrastructure)
 - In Situ
 - Mining (oil sands and coal)
 - Pipelines (all pipelines)
- The vice president of Industry Operations leads teams that are responsible for setting day-to-day priorities that align with the strategic plans and priorities of the AER.
 - Function branches focus on the mechanics: how things get done.

This is where our technical and process experts reside; they work with their colleagues in the sector branches to ensure that we are applying efficient, standard processes to the various sectors we regulate. Function branches include the Authorizations Branch, Environment and Operational Performance Branch, and Closure and Liability Branch.

- Vice presidents of function branches are accountable for defining how the work gets done, for balancing consistency and effectiveness, and for responding to the unique needs of the sector teams:
 - The Authorizations Branch delivers project approvals and permits that focus on the start of new resource developments.
 - The Environment and Operational Performance Branch promotes compliance through education, prevention, and enforcement-focused programs. Its core functions include emergency management, incident response, compliance assurance, and compliance program design.
 - The Closure and Liability Branch oversees the end-of-life aspects of energy developments, which includes protecting Albertans from potential environmental issues and costs related to abandoning and decommissioning energy infrastructure.

STRATEGY & REGULATORY DIVISION

The Strategy and Regulatory Division identifies and manages issues, risks, and opportunities while steering the AER's regulatory development.

The division's staff

- use science and fact-based evaluation and forecasts to identify and manage issues, risks, and opportunities;
- manage the regulatory development process; and
- develop and implement the AER's enterprise, strategic, and corporate operations plans.

The Strategy and Regulatory Division comprises five branches and one group that help to deliver expertise to the AER:

- The Major Projects and Transformation Branch oversees major AER projects and transformation initiatives.
- The Regulatory Operations and Economics Branch makes sure that we deliver consistent, predictable, and transparent regulatory change. This branch implements practical operating procedures for regulatory development and reports on energy statistics, including forecasting and data on cumulative land impacts.
- The Reserves and Resources Branch monitors and reports on current and reliable indicators in energy resource, environmental, and social outcomes related to energy development at the reservoir to play-based scales.



- The Alberta Geological Survey is a branch that provides the AER with scientific peer-reviewed research, maps, and reports on Alberta's geology, earth resources, geological hazards, and groundwater at the regional scale.
- The Climate Policy Assurance Team is responsible for designing and delivering on the Government of Alberta's climate change policy direction by creating and implementing an effective and efficient regulatory framework.
- The Enterprise Planning Group facilitates the process of enterprise planning and prioritization, using risk and performance management, ensuring that initiatives and projects are aligned with our mandate and vision.

STAKEHOLDER & GOVERNMENT ENGAGEMENT DIVISION

The AER recognizes empathic engagement as a key attribute of regulatory excellence and strives to build relationships with Albertans, indigenous peoples, stakeholders and our government partners. The Stakeholder and Government Engagement division supports all AER work through engagement, relationship building, information sharing, and collaborating with people and groups who are interested in or may be impacted by the AER's decisions.

A solid understanding of different perspectives and interests helps the AER to define priorities, develop solutions, improve our work, and make better, more informed decisions. The AER's engagement activi-

ties support stakeholder participation in regulatory development and decision making at many different stages in the development of Alberta's oil and gas resources. Building stronger relationships results in more transparent, cooperative, and productive conversations. Our division builds these mutually beneficial relationships through six branches:

- Alberta Government Engagement works with AER staff and our Government of Alberta partners to ensure that policy development and regulatory delivery for development of Alberta's energy resources are integrated and aligned with each other. This branch provides strategic advice and engagement expertise to all areas of the organization with respect to the Alberta Government.
- Alberta Stakeholder Engagement (ASE) engages our Alberta stakeholders and indigenous peoples to understand how they are affected by, or concerned about, energy development in Alberta. This engagement informs how the AER responds to issues and concerns. ASE connects with people across the province through community, indigenous and alternative dispute resolution specialists.
- National and International Relations leads and facilitates organization-wide improvement that is informed by national and international perspectives. The AER is committed to demonstrating national and international leadership in regulating energy resources by learning from and sharing best practices and knowledge with our peers across Canada and around the globe.

- Public Affairs is responsible for making sure that the AER's communications, both internal and external, are clear, timely and easy to understand. It provides many services to the organization, including media relations and crisis communications, strategic planning and advice, internal and corporate communications, editing, graphic design, digital media services, and web services.
- The Centre of Regulatory Excellence, a newly created branch, builds the expertise needed by the AER's workforce to deliver regulatory excellence through a strategically focused and centralized learning development center.
- The Environmental Science Program works to protect Alberta's environment by providing strategic focus for the effective management of cumulative environmental risks and impacts from energy development.

CORPORATE SERVICES DIVISION

This division focuses on people, infrastructure, information, and fiscal responsibility. It is designed to support the organization with key corporate functions such as technology, data and information management, workplace services, finance, administration, internal audit, and human resources. In addition, the AER's chief environmental scientist reports to this division's executive vice-president.

The Corporate Services Division supports the organization with essential knowledge, advice, and services related to their areas of expertise. Services are

provided from Calgary and, where it makes sense, in field offices to ensure that all AER employees have access to the vital corporate services required to do their jobs.

The division is committed to providing the AER with the tools needed to conduct our business and make the AER a great place to work. Branches under the Corporate Services Division include the following:

- Administrative/Workplace Services
- Finance
- People and Culture
- Information Management
- Information Services
- Internal Audit

LAW BRANCH

The Law Branch provides services by assigning AER lawyers to projects, teams, applications, regulatory initiatives, proceedings, etc. on an as-needed basis. This approach will continue. The Law Branch also continues to take steps to increase its expertise in the specified enactments. In addition, this branch drafts all legislative, rule, and regulation content for the numerous statutes we administer and drafts and reviews contracts. It also addresses all issues around litigation and appeals.

Our lawyers understand and have expertise in the statutes the AER administers—including all rules and regulations—as they relate to energy development, which include

- the *Responsible Energy Development Act*,
- the *Oil and Gas Conservation Act*,
- the *Pipeline Act*,
- the *Oil Sands Conservation Act*,
- the *Coal Conservation Act*,
- the *Water Act*,
- the *Environmental Protection and Enhancement Act*,
- the *Public Lands Act*, and
- parts of the *Mines and Minerals Act*.

In light of current market conditions it's not surprising that the AER's work in the area of insolvency has increased exponentially in the last year, both in terms of the number of licensees that have become insolvent and the number of licensed properties. With this has come an increased risk of unfunded end of life obligations.

The Law Branch has actively engaged licensees and receivers/trustees in an effort to lessen the risk to the Orphan Well Association, and ultimately the public, of having to bear these costs. Two examples are the Redwater Energy Corp. litigation before the Court of Queen's Bench and the AER's agreement in the matter of Spyglass Resources Corp. In both cases, the AER's objective has been to reduce the risk of Albertans having to bear the costs of addressing unfunded abandonment and reclamation obligations.

A blue-tinted photograph of a snowy mountain landscape. In the foreground, a stone cairn is built on a rocky outcrop. The background features snow-covered mountains and a body of water. The text is overlaid on the left side of the image.

CORPORATE GOVERNANCE > ПОЛІТИКА СВЬОВАНІ

How an organization is governed determines how it carries out its daily business and how successful it is at achieving its goals. For this reason, corporate governance was a key consideration when the AER was created in June 2013.

The AER's governance structure separates the corporate, operational, and governance responsibilities from adjudicative functions (hearings on energy applications). Through this model, the AER seeks to realize its full potential as the single regulator of Alberta's energy resource development, as well as gain the confidence of its many stakeholders.

BOARD OF DIRECTORS

A chair heads the AER and leads a board of directors; none are involved in the AER's day-to-day operations or decisions. Rather, these directors set the general direction of the regulator's business affairs, including approval of the strategy and budget. The directors are also charged with approving regulatory change and setting performance expectations for the AER and its president and chief executive officer. In this way, the AER's board operates as a truly "corporate-style" board.

PRESIDENT AND CHIEF EXECUTIVE OFFICER

The president and chief executive officer, who reports directly to the chair, is accountable for day-to-day operations, which include receiving and making decisions on applications, monitoring and investigating energy resource activities for compliance, and overseeing reclamation and remediation of energy developments at the end of their life cycle.

HEARING COMMISSIONERS

Hearing commissioners are responsible for conducting all hearings into energy applications and regulatory appeals. Reporting to a chief hearing commissioner, they are independent adjudicators and operate free of political interference; their decisions may only be reviewed by the Court of Appeal of Alberta.

board of directors

BOARD HIGHLIGHTS

During the eight meetings the AER’s board of directors held throughout the 2015/16 fiscal year, the board approved changes to the 2016–19 strategic plan and approved the 2016/17 budget. Additionally, the board approved several rule changes relating to regulatory instruments and administration and orphan levies while it monitored the AER’s progress on delivering on the strategic plan’s four key priorities.

The board strongly supported and endorsed both the Regulatory Excellence Project and the Centre of Regulatory Excellence (CORE) over the last year. The board received briefings on the Regulatory Excellence Project, and provided comments on the project and the recommendations, as well as on AER action plans and development plans for CORE.

The board made a significant governance change that separated oversight for the AER’s risk management activities from the audit and finance committee and created a separate risk management committee with its own terms of reference.

The AER board of directors welcomed Cassie Doyle as its newest member last year. Ms. Doyle joined the board in March 2015, bringing with her public sector and governance experience, with a particular emphasis on the environment.

And while we welcomed Ms. Doyle to the directors’ table, we said goodbye to two long-standing members: Fred Estlin, who chaired the audit and finance committee, and Cameron Bailey, the first chair of the risk management committee. Both directors played critical roles in establishing strong governance practices and oversight for the AER, and the board thanks them for their contributions and wishes them well in their future endeavours.

1	CASSIE DOYLE Risk Management Committee Chair	<div>8</div> <div>8</div>
2	ANDY NEIGEL, RPF, B.Sc.FORESTRY Governance Committee Chair	<div>7</div> <div>8</div>
3	SHEILA O'BRIEN, C.M., B.A. Human Resources, Health and Safety Committee Chair	<div>7</div> <div>8</div>
4	DR. DAVID CHALACK, D.V.M. ICD.D	<div>8</div> <div>8</div>
5	PETER FLYNN, PH.D., P.ENG. Audit and Finance Committee Chair	<div>8</div> <div>8</div>
6	GERRY PROTTI, M.A., ICD.D Chair, Nomination Committee Chair	<div>8</div> <div>8</div>
Meetings attended		<div>#</div> <div>8</div>

BY THE NUMBERS

8

meetings

6

committees



BOARD COMMITTEES

The AER's six board committees receive reports and recommendations from management, provide information, make recommendations to the board for approval, and make decisions on behalf of the board in their areas of authority. The following summarizes the business of each committee over the past year.

The **Audit and Finance Committee** reviewed the AER's management discussion and analysis (MD&A). In addition to reviewing quarterly statements and the annual financial results and budget, the committee met with Internal Audit at each of its meetings and monitored how AER management incorporated internal audit recommendations. The committee also met with the Auditor General of Alberta for the standing annual audit meeting.

The **Governance Committee** performed a full review of the terms of reference of all board committees and corporate bylaws to determine whether revisions were required and brought forward recommendations for the board's approval. The committee also managed the annual board evaluation process.

The **Human Resources, Health and Safety Committee** reviewed results of the occupational health and safety audit, the balances and performance of the various pension plans administered by the AER, and the governance and oversight of the individual plan assets and benefit provisions. The committee also advised the board on the CEO and executive team succession plans. Additionally, the committee reviewed workforce metrics and the ongoing development of a new competency framework that will support CORE.

The **Nomination Committee** prepared plans for the potential recruiting new directors in fiscal 2016/17.

The **Regulatory Review Committee** reviewed changes to and brought to the board for information a number of regulatory instruments, including

- *Directive 050: Drilling Waste Management,*
- *Directive 036: Drilling Blowout Prevention Requirements and Procedures,*
- *Directive 017: Measurement Requirements for Oil and Gas Operations,*

- *Directive 060: Upstream Petroleum Industry Flaring, Incineration and Venting,*
- the *Integrated Compliance Assurance Framework,* and
- draft directives outlining requirements for hydrocarbon emission controls and gas conservation in the Peace River area.

The committee took several rule amendments to the board for approval, including the annual orphan and administration levies.

The **Risk Management Committee** participated in a risk management workshop through the University of Alberta. The committee also reviewed the AER's move toward a risk management process in addition to reviewing a third-party analysis of the AER's historical risk management systems. The committee brought forward for board approval the principal risk reports and recommendations for dam safety and induced seismicity.



executive leadership team

Chair of the Board

President & CEO

- | | | |
|--|---|--|
| 1 RICK BROWN
Executive Vice President
Corporate Services | 4 JENNIFER STEBER
Executive Vice President Stakeholder &
Government Engagement | 6 KIRK BAILEY
Executive Vice President
Operations |
| 2 PATRICIA JOHNSTON
General Counsel,
Executive Vice President Law | 5 MARTIN KREZALEK
Chief of Staff
Office of the President & CEO | 7 CAL HILL
Executive Vice President
Strategy & Regulatory |
| 3 JIM ELLIS
President & Chief
Executive Officer | | |

The AER president and CEO reports directly to the chair of the AER board of directors and is accountable for day-to-day operations, which include receiving and making decisions on applications, monitoring and investigating energy resource activities for compliance, and closure of energy developments, including remediation and reclamation.



1 **HEATHER KENNEDY, B.Sc.**
Part-time Hearing Commissioner

2 **ALEX BOLTON, B.Sc., M.M.Sc., P.GEO.**
Chief Hearing Commissioner

3 **JOHN LAWSON, MPA**
Part-time Hearing Commissioner

4 **CECILIA LOW, B.Sc., LL.B., LL.M.**
Full-time Hearing Commissioner

5 **BRAD MCMANUS, Q.C.**
Full-time Hearing Commissioner

6 **CHRISTINE MACKEN, B.A.**
Full-time Hearing Commissioner

7 **ROB MCMANUS B.A., M.E.Des.**
Full-time Hearing Commissioner

8 **LORNE TERNES, LL.B**
Part-time Hearing Commissioner

9 **TERRY ENGEN**
Part-time Hearing Commissioner

10 **BARBARA McNEIL, B.Sc., C.M.**
Full-time Hearing Commissioner

Not pictured
JURGEN PREUGSHA
Part-time Hearing Commissioner

hearing commissioners

15 files referred to the chief
hearing commissioner

4 hearings held

9 files resolved without hearing



3 oral hearings
1 written hearing

Hearing commissioners represent an important part of the AER's structure. Reporting to a chief hearing commissioner, the hearing commissioners are responsible for conducting public hearings and alternative dispute resolution processes related to energy applications and regulatory appeals referred to them by the AER. Appointed by the Government of Alberta through an Order in Council, hearing commissioners are independent decision makers whose decisions are only subject to review by the Court of Appeal of Alberta.

Hearing commissioners have access to a range of adjudicative and mediation processes to resolve disputes. These include oral, written, and electronic hearings before a panel of hearing commissioners (usually three) or a single decision maker as well as hearing-commissioner-facilitated mediation, settlement conferences, and binding dispute resolution. Hearing commissioners strive to ensure the most appropriate process is used having regard for the nature of issues in dispute, the efficient and effective use of resources, and the requirements of natural justice and procedural fairness.

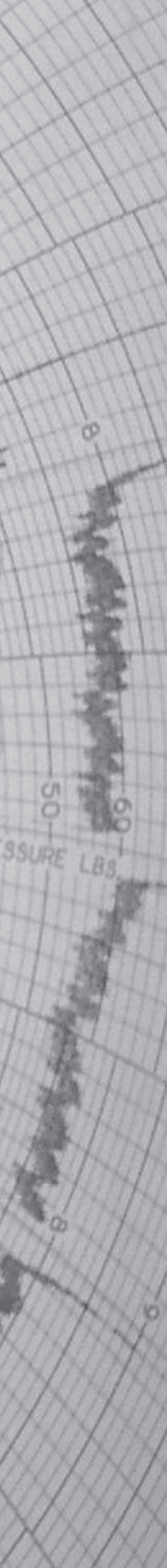
Since the AER was created in 2013, there has been an increase in the use of mediation processes and a decline in the number of hearings held.

In fiscal 2015/16, fifteen files were referred to the chief hearing commissioner. During this time, four hearings were held and nine files were resolved without the need for a hearing. Of these, three oral hearings were held; two of which were related to pipeline projects and one was related to a regulatory appeal of an AER decision to deny a **reclamation certificate**. One written hearing was held, which resulted in a person being sanctioned for failing to comply with previous AER orders.

Of the nine files resolved without a hearing, hearing commissioners or staff used alternative dispute resolution processes on six files. This resulted in the withdrawal of statements of concern or requests to participate in a hearing on three files and the withdrawal of applications on three files. Eleven files for hearings are pending as of March 31, 2016.

MANAGEMENT'S DISCUSSION & ANALYSIS ›

DISCUSSION &
MANAGEMENT'S



This management's discussion and analysis (MD&A) should be read in conjunction with the audited financial statements of the Alberta Energy Regulator (AER) for the years ended March 31, 2016 and 2015, and accompanying notes. The AER's financial statements and the financial data in this MD&A have been prepared in accordance with Canadian public sector accounting standards (PSAS).

All comparisons are between the years ended March 31, 2016 and 2015, unless otherwise noted. All amounts are expressed in thousands of Canadian dollars, unless otherwise noted.

ABOUT THE AER

The AER is the single provincial regulator for oil, natural gas, oil sands, and coal development in Alberta, operating under the *Responsible Energy Development Act (REDA)*. The AER ensures the safe, efficient, orderly, and environmentally responsible development of hydrocarbon resources over their entire life cycle. This includes allocating and conserving water resources, managing public lands, and protecting the environment while providing economic benefits for all Albertans.

All amounts are expressed in thousands of Canadian dollars, unless otherwise noted.

SUMMARY ANNUAL HIGHLIGHTS

	2016	2015
Administration levy	\$ 240 168	\$ 243 278
Orphan well levy	30 167	15 000
Provincial grant	—	19 800
Other revenue	8 145	9 914
Total revenue	278 480	287 992
Energy regulation	249 113	256 827
Orphan abandonment	31 111	15 760
Total expenses	280 224	272 587
Capital investment	\$ 14 196	\$ 20 854

The AER is an industry-funded regulator that is accountable to the Government of Alberta. The AER recovers its operating and capital asset costs through two separate revenue sources: an administration levy and other revenue. The AER collects the orphan well levy, which is paid directly to the Alberta Orphan Well Association (OWA) and is not used to recover the AER's costs.

With commodity prices low, the AER faced new challenges in fiscal 2016, including budget reductions in the administration levy and energy regulation expenses. In addition, the AER received no government funding in fiscal 2016. The provincial grant, which was received in fiscal 2015, was primarily for the remaining costs of setting up the new regulator.

To demonstrate fiscal restraint, continue its commitment to the effective management of its financial resources, and maximize the benefit from the funding it received, the AER extensively reviewed its budget. The review identified a number of expenditures that could be reduced without affecting the AER's mandate and its ability to advance key initiatives that contribute to the AER's vision. Cost-saving initiatives that followed the review included freezing salaries and reducing discretionary expenditures. These measures are reflected in the AER's energy regulation expenses, which decreased overall by \$7 714, or 3 per cent, in fiscal 2016.

Capital investment was reduced by \$6 658, or 32 per cent, in fiscal 2016 compared to the previous year because of one-time costs incurred in fiscal 2015 to set up the new regulator. Capital investment in 2015 included the expansion and restructuring of existing and new leased office spaces, as well as system enhancements and software purchases required to fulfil the AER's expanded mandate.

All amounts are expressed in thousands of Canadian dollars, unless otherwise noted.

TOTAL REVENUES

Administration Levy

REDA authorizes the AER to levy an administration fee on the sectors that it regulates. Funds from industry levies and assessments are used to support the AER's operations and fulfil the AER's mandate to ensure the safe, efficient, orderly, and environmentally responsible development of hydrocarbon resources over their entire life cycle.

The AER's revenue requirements directly affect operator levy invoices. Other factors also contribute to the fee determination at an operator level, including increases and decreases in wells or entities within the sector, ownership transfers and amalgamations, new entrants, and volume fluctuations. Invoices vary according to individual operations, are based on operating statistics for the previous calendar year, and are levied to operators based on the sector they operate within.

	2016	2015
Oil and gas	\$ 174 308	\$ 176 475
Oil sands	62 184	63 062
Coal	3 601	3 630
Other	75	111
Total administration levy	\$ 240 168	\$ 243 278

The administration levy for the year ended March 31, 2016, decreased by \$3 110, or 1 per cent. This decrease is related to the 2016 expense targets, which the AER reduced because of the current economic downturn in Alberta.

All amounts are expressed in thousands of Canadian dollars, unless otherwise noted.

Orphan Well Levy

	2016	2015
Orphan well levy	\$ 30 000	\$ 15 000
Penalties	167	—
Total orphan well levy	\$ 30 167	\$ 15 000

Under part 11 of the *Oil and Gas Conservation Act*, the AER, by regulation, prescribes an orphan fund levy. This levy is based on the revenue requirements identified by the OWA and approved by the Government of Alberta. All levies collected are paid directly to the OWA and are not used to recover the AER's costs. In fiscal 2016, the Government of Alberta approved an increase to the orphan well levy from \$15 000 to \$30 000 to address the increase in orphan sites.

Provincial Grant

	2016	2015
Provincial grant	\$ —	\$ 19 800

The AER did not receive provincial grant revenue in fiscal 2016. The 2015 grant was related to the final costs of implementing the AER and its expanded responsibilities.

Other Revenue

	2016	2015
Other revenue	\$ 8 145	\$ 9 914

Other revenue consists of investment income, first-time well licence fees, data subscriptions, recoverable abandonment, and enforcement revenue and sales of electronic data and publications. In fiscal 2016, other revenue decreased by \$1 769, or 18 per cent, due to the current economic conditions and the overall decline in oil and gas activity.

All amounts are expressed in thousands of Canadian dollars, unless otherwise noted.

TOTAL EXPENDITURES

Total expenditures reflect the AER's use of its revenue sources to fund operating expenses and capital investment each fiscal year. Details of significant annual expenditures are included below.

i) Energy Regulation Expenses

	2016	2015
Salaries, wages, and employee benefits	\$ 180 705	\$ 178 148
Computer services	15 719	15 912
Buildings	15 198	18 016
Consulting services	13 692	19 990
Amortization of tangible capital assets	12 645	11 836
Other expenses*	11 154	12 925
Total energy regulation expenses	\$ 249 113	\$ 256 827

* Includes travel and transportation, administrative, equipment rent and maintenance, abandonment and enforcement costs, and loss on disposal and write-down of tangible capital assets.

Salaries, Wages, and Employee Benefits

Salaries, wages, and employee benefits account for about 70 per cent of energy regulation expenses. And, because stellar competence was one of the attributes Albertans and stakeholder groups identified as being required for regulatory excellence, the AER must continue to retain and attract qualified individuals with appropriate skill sets.

In fiscal 2016, salaries, wages, and employee benefits increased by \$2 557, or 1 per cent, as the AER hired employees necessary to meet the increased regulatory responsibilities and support the functions expanded with the setup of the new regulator. While new employees were hired, the AER remained within the Government of Alberta's preapproved target for staffing levels.

Computer Services

The AER's computer services costs relate to data and information management, computer maintenance, and server hosting. In fiscal 2016, computer services costs were consistent with those incurred in 2015.

All amounts are expressed in thousands of Canadian dollars, unless otherwise noted.

Buildings

The AER leases several offices throughout the province. In fiscal 2016, building costs decreased by \$2 818, or 16 per cent. This decrease is attributed mainly to property tax exemptions the AER received on its Calgary properties. In fiscal 2014 and 2015, the AER applied to the City of Calgary to be classified as exempt from taxation. In fiscal 2016, the City of Calgary granted the AER property tax exemption status.

Consulting Services

The AER hires outside consultants to provide strategic and technical advice and certain operational services. The costs of consulting services in fiscal 2016 were \$13 692, a decrease of \$6 298, or 32 per cent, from fiscal 2015. The AER undertook fewer projects in 2016 as it completed projects that were initiated in prior years and others that were required to set up the new regulator.

In fiscal 2016, most consultants were hired to support work focused on the AER's regulatory excellence initiative. This work included the following:

- contracting experts from the University of Pennsylvania's Penn Program on Regulation to help define regulatory excellence and identify the key attributes of an excellent regulator;
- bringing in expertise to help with the Near-Term Action Program, a project aimed at making the AER more effective and efficient by eliminating duplication and streamlining regulatory requirements;
- the single integrated-application approach, a project that will change how the AER processes applications for development; and
- other projects and initiatives that support the AER in delivering on its strategic plan to be a protective, effective, efficient, and credible regulator.

Amortization of Tangible Capital Assets

Capital assets are amortized over their estimated useful lives in accordance with PSAS. The cost of amortizing tangible capital assets increased by \$809, or 7 per cent, from the previous year. This increase is attributed to the additions made to capital assets in fiscal 2016.

ii) Orphan Abandonment Expenses

	2016	2015
Orphan abandonment	\$ 31 111	\$ 15 760

Orphan abandonment expenses were \$31 111 in fiscal 2016, an increase of \$15 351, or 97 per cent. The increase is related to the change in OWA revenue requirements, which was approved by the Government of Alberta. The revenue requirements were increased to address the increase in orphan sites.

All amounts are expressed in thousands of Canadian dollars, unless otherwise noted.

iii) Capital investment

	2016	2015
Capital investment	\$ 14 196	\$ 20 854

Capital investment totalled \$14 196 in fiscal 2016 compared to \$20 854 in fiscal 2015. Developing and acquiring tangible capital assets, most significantly investment in information technology infrastructure and systems, is a key component of AER operations.

In fiscal 2016, the AER's investment in computer hardware and software was \$10 567 and focused on the upgrades to the AER's applications and databases, as well as the development of new systems required to support current operations and meet ongoing changes in the regulatory environment. In addition, the AER spent \$3 629 on leasehold improvements, furniture, and equipment with the majority of the costs related to the relocation of two field offices.

In fiscal 2015, the investment in tangible capital assets of \$20 854 related primarily to the costs of setting up the AER, which included expanding and restructuring existing and new lease office spaces, as well as system enhancements and software purchases necessary for the expanded mandate.

LIQUIDITY AND FINANCIAL POSITION

Liquidity

The AER collects funding at the beginning of the year to meet all obligations that arise during the year. In addition, an available bank credit facility provides financial flexibility and allows the AER to meet its obligations if funding cannot be collected on time. To date, the AER has not been required to draw on the credit facility. The AER ended fiscal 2016 with \$24 851 in cash and cash equivalents compared to \$54 040 at the end of fiscal 2015.

Accounts Receivable

Accounts receivable were \$18 149 on March 31, 2016, compared to \$12 245 on March 31, 2015, an increase of \$5 904. The increase is mainly due to the timing of issuing the orphan well levy in 2016. In fiscal 2016, the levy was issued later than in fiscal 2015.

Accounts Payable

Accounts payable and accrued liabilities on March 31, 2016, were \$16 643 compared to \$33 511 on March 31, 2015, a decrease of \$16 868. The decrease in the accounts payable and accrued liabilities balance on March 31, 2016, is attributed to the overall decrease in the AER's expenditures in fiscal 2016 compared to fiscal 2015, as well as the timing of payment for the AER's computer services and consulting expenses.

All amounts are expressed in thousands of Canadian dollars, unless otherwise noted.

SECURITY DEPOSITS

	2016	2015	2016	2015
	Cash	Cash	Letters of Credit	Letters of Credit
Licensee Liability Rating Program	\$ 107 695	\$ 92 635	\$ 183 162	\$ 153 521
Mine Financial Security Program	24 230	24 020	1 340 513	1 548 938
Other	6 200	6 180	4 664	4 782
Total security deposits	\$ 138 125	\$ 122 835	\$ 1 528 339	\$ 1 707 241

The AER collects financial security under a number of different programs to protect the public from paying significant costs associated with abandoning and decommissioning energy development sites.

- The Licensee Liability Rating (LLR) program is designed to
 - prevent the costs of suspending, abandoning, remediating, and reclaiming a well, facility, or pipeline in the LLR program from being borne by the public of Alberta should a licensee become defunct and
 - minimize the risk to the orphan fund posed by the unfunded liability of licensees in the program.

The program is based on a comparison of the ratio of assets (which are based on production) to liabilities (abandonment and reclamation costs).

Effective May 1, 2013, the AER made changes to the LLR program to address concerns that the previous LLR program underestimated abandonment and reclamation liabilities of licensees; the changes were made with the support of the Canadian Association of Petroleum Producers and the Explorers and Producers Association of Canada. These changes were implemented in a three-phased approach and increased the amount of security that licensees who participate in the LLR program must deposit. The last phase of the program was implemented in fiscal 2016.

As of March 31, 2016, the AER held \$107 695 in cash under the LLR program. This is \$15 060, or 16 per cent, higher than on March 31, 2015. The total amount of letters of credit held under the LLR program as of March 31, 2016, was \$183 162, which is \$29 641, or 19 per cent, higher than in fiscal 2015. The increase in cash and letters of credit held under the LLR program was caused by the implementation of the third phase of the program changes discussed above, as well as by the decline in production due to low oil and gas prices, which reduced asset values and decreased the asset-to-liability ratios for licensees.

All amounts are expressed in thousands of Canadian dollars, unless otherwise noted.

- The Mine Financial Security Program (MFSP) was developed to manage liabilities associated with coal and oil sands mining operations. The program requires a base amount of security for each project, which would provide the funds necessary to place the site in a safe and secure state and maintain care and custody should the approval holder fail to meet its obligations. Approval holders have an option to provide full financial security at any time in the life of the project based on the MFSP liability calculation. Approval holders are responsible for the suspension, abandonment, remediation, and reclamation of lands disturbed by resource development. As mines are depleted, security amounts increase. Additional security must also be posted when a mine owner does not meet certain financial tests. Annually, approval holders report to the AER on the status of reclamation and land disturbances and adjust their MFSP security deposits accordingly.

The total amount of letters of credit held under the MFSP as of March 31, 2016, was \$1 340 513, which is \$208 425, or 13 per cent, lower than in fiscal 2015. In fiscal 2016, \$233 163 in letters of credit outstanding under the MFSP as of March 31, 2015, were returned to licensees who originally elected to provide full financial security and later elected to provide base security, in accordance with the MFSP. This was offset by an additional \$24 738 in letters of credit placed with the AER as a result of additional land disturbances caused by mining and processing operations.

All amounts are expressed in thousands of Canadian dollars, unless otherwise noted.

ACTUAL RESULTS COMPARED WITH BUDGET

	2016 Budget	2016 Actual
Revenues		
Administration levy	\$ 240 093	\$ 240 168
Orphan well levy	30 000	30 167
Other revenue	8 159	8 145
	278 252	278 480
Expenses		
Energy regulation	253 252	249 113
Orphan abandonment	30 500	31 111
	283 752	280 224
Annual operating (deficit)	(5 500)	(1 744)
Capital		
Capital investment	9 000	14 196
Less: Amortization	(11 500)	(12 645)
Loss on disposal and write-down of tangible capital assets		(332)
Net capital investment	(2 500)	1 219
	\$ (3 000)	\$ (2 963)

The AER prepares an annual budget that is approved by the Government of Alberta.

The AER's total revenues were consistent with budget. The AER's energy regulation expenses for the year were \$4 139 less than budget, and net capital investment exceeded budget by \$3 719. These variances are due to the acceleration of implementing computer software development projects and upgrades.

All amounts are expressed in thousands of Canadian dollars, unless otherwise noted.

RISK MANAGEMENT

A key role of the AER's management is to ensure that the wide variety of risks the AER is exposed to in delivering its mandate are managed responsibly. To this end, the AER has developed an enterprise risk management process that supports the organization in identifying, assessing, and managing risks. Effective risk management is a key element of excellent organizational governance, and it is characterized by a process of continuous review and improvement.

The key features of the AER's governance and internal control environment, which directs and guides AER risk management, are as follows:

- The general direction of the AER's business affairs is set by a board of directors. These directors are all independent and appointed by Orders in Council made by the Lieutenant Governor in Council under *REDA*.
- The AER is committed to maintaining a high level of ethics and integrity. The AER board and management foster these values throughout the organization and maintain an effective whistleblower policy. The AER maintains a code of conduct applicable to its directors, officers, employees, and contractors. This code of conduct reflects the values of the AER, and provides rules and guidance on adhering to these values in a way that ensures the organization's integrity is maintained.
- The board has established a standing Risk Management Committee that meets regularly to ensure that the AER has effective risk management practices in place and to review the related systems of internal controls that are required to manage enterprise-level risks.
- The AER has an Enterprise Risk Management Program in place, which provides a common framework to identify, assess, and manage risks in line with the organization's mandate.
- The Audit and Finance Committee reviews and monitors the system of internal financial controls, the external audit process, and the AER's process for ensuring compliance with applicable laws and regulations.
- AER management is responsible for establishing and maintaining adequate internal controls over financial reporting. These controls are designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with PSAS.
- The AER's internal audit function provides the AER with an objective and independent assessment of internal controls and identifies opportunities to improve operational and financial reporting. The AER's internal audit department reports directly to the Audit and Finance Committee and, if required, discusses matters with the Audit and Finance Committee independent of management.

All amounts are expressed in thousands of Canadian dollars, unless otherwise noted.

FUTURE OUTLOOK

Fiscal 2017 Budget Compared to Fiscal 2016 Budget

	2017 Budget	2016 Budget
Revenues		
Administration levy	\$ 238 403	\$ 240 093
Orphan well levy	30 000	30 000
Other revenue	5 013	8 159
	273 416	278 252
Expenses		
Energy regulation	245 416	253 252
Orphan abandonment	30 500	30 500
	275 916	283 752
Annual operating (deficit)	(2 500)	(5 500)
Capital		
Capital investment	9 000	9 000
Less: Amortization	(11 500)	(11 500)
Net capital investment	(2 500)	(2 500)
	\$ —	\$ (3 000)

All amounts are expressed in thousands of Canadian dollars, unless otherwise noted.

Due to current fiscal limitations, the AER made the following reductions in the 2017 budget as compared to the 2016 budget:

- the administration levy was reduced by \$1 690, or 1 per cent;
- other revenue was reduced by \$3 146, or 39 per cent; and
- energy regulation costs were reduced by \$7 836, or 3 per cent.

The AER's 2016 budget identifies a budget deficit of \$3 000. In fiscal 2016, the AER received a one-time approval from Treasury Board and Finance to use \$3 million of accumulated surplus to relocate the Grande Prairie Field Centre in order to address safety concerns for staff, which included significant structural issues and insufficient space. This expenditure did not require an increase in government funding or an additional levy from industry. In fiscal 2017, the AER is forecasting a balanced budget.

FORWARD-LOOKING STATEMENTS

This MD&A contains forward-looking statements that are subject to certain assumptions and risks that create uncertainties. These assumptions and risks could cause actual results to differ materially from results anticipated by the forward-looking statements.

ADDITIONAL INFORMATION

Additional information relating to the AER can be found on the AER's website at www.aer.ca.

ALBERTA ENERGY REGULATOR FINANCIAL STATEMENTS ›

*FOR THE YEAR ENDED
MARCH 31, 2016*

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INDEPENDENT AUDITOR'S REPORT TO THE BOARD OF DIRECTORS OF THE ALBERTA ENERGY REGULATOR

REPORT ON THE FINANCIAL STATEMENTS

I have audited the accompanying financial statements of the Alberta Energy Regulator, which comprise the statement of financial position as at March 31, 2016, and the statements of operations, change in net debt and cash flows for the year then ended, and a summary of significant accounting policies and other explanatory information.

MANAGEMENT'S RESPONSIBILITY FOR THE FINANCIAL STATEMENTS

Management is responsible for the preparation and fair presentation of these financial statements in accordance with Canadian public sector accounting standards, and for such internal control as management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

AUDITOR'S RESPONSIBILITY

My responsibility is to express an opinion on these financial statements based on my audit. I conducted my audit in accordance with Canadian generally accepted auditing standards. Those standards require that I comply with ethical requirements and plan and

perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

I believe that the audit evidence I have obtained is sufficient and appropriate to provide a basis for my audit opinion.

OPINION

In my opinion, the financial statements present fairly, in all material respects, the financial position of the Alberta Energy Regulator as at March 31, 2016, and the results of its operations, its remeasurement gains and losses, its changes in net debt, and its cash flows for the year then ended in accordance with Canadian public sector accounting standards.

[Original signed by Merwan N. Saher FCPA, FCA]

Auditor General
May 11, 2016
Edmonton, Alberta

MANAGEMENT'S RESPONSIBILITY FOR FINANCIAL REPORTING

The accompanying financial statements of the Alberta Energy Regulator (AER) and all other information relating to the AER contained in this annual report have been prepared and presented by management, who is responsible for the integrity and fair presentation of the information.

These financial statements are prepared in accordance with Canadian Public Sector accounting standards. The financial statements necessarily include some amounts that are based on informed judgments and best estimates of management. The financial information contained elsewhere in this annual report is consistent with that in the financial statements.

Management is responsible for maintaining an effective system of internal controls designed to provide reasonable assurance that financial information is reliable, transactions are properly authorized, assets are safeguarded, and liabilities are recognized.

The Auditor General of Alberta, the AER's external auditor appointed under the *Auditor General Act*, performed an independent external audit of these financial statements in accordance with Canadian generally accepted auditing standards, and has expressed his opinion in the accompanying Independent Auditor's Report.

The board of directors is responsible for ensuring that management fulfills its responsibilities for financial reporting and internal controls. The board of directors exercises this responsibility through the Audit and Finance Committee, composed of directors who are not employees of the regulator. The Audit and Finance Committee meets with the internal auditors and the external auditors, both in the presence and in the absence of management to discuss their audit, including any findings as to the integrity of financial reporting processes and the adequacy of our systems of internal controls. The internal and external auditors have full and unrestricted access to the Audit and Finance Committee.

[Original signed by Jim Ellis]
President and Chief Executive Officer

[Original signed by Rick Brown]
Executive Vice President, Corporate Services

[Original signed by Tom Heywood]
Vice President, Finance and Chief Financial Officer

May 11, 2016

**ALBERTA ENERGY REGULATOR
STATEMENT OF OPERATIONS**
Year Ended March 31

(in thousands)

	2016		2015
	Budget (Note 3)	Actual	Actual
Revenues			
Industry levies and assessments	\$ 270 093	\$ 270 335	\$ 258 278
Provincial grant		—	19 800
Information, services and fees	6 859	6 867	8 260
Investment	1 300	1 278	1 654
	278 252	278 480	287 992
Expenses			
Energy regulation (Schedule 1)	253 252	249 113	256 827
Orphan abandonment (Note 4)	30 500	31 111	15 760
	283 752	280 224	272 587
Annual operating (deficit) surplus	(5 500)	(1 744)	15 405
Accumulated operating surplus at beginning of year	63 855	63 855	48 450
Accumulated operating surplus at end of year	\$ 58 355	\$ 62 111	\$ 63 855

The accompanying notes and schedules are an integral part of these financial statements.

**ALBERTA ENERGY REGULATOR
STATEMENT OF FINANCIAL POSITION**
As at March 31

(in thousands)

	2016	2015
Financial assets		
Cash and cash equivalents (Note 5)	\$ 24 851	\$ 54 040
Security deposits (Note 7)	138 125	122 835
Accounts receivable	18 149	12 245
	181 125	189 120
Liabilities		
Accounts payable and accrued liabilities	16 643	33 511
Grant payable to Orphan Well Association	15 093	15 055
Security deposits (Note 7)	138 125	122 835
Deferred revenue (Note 9)	1 604	2 056
Deferred lease incentives (Note 10)	22 264	23 023
Pension obligations (Note 12)	692	2 349
	194 421	198 829
Net debt	(13 296)	(9 709)
Non-financial assets		
Tangible capital assets (Note 13)	64 430	63 211
Prepaid expenses and other assets	10 977	10 353
	75 407	73 564
Accumulated operating surplus (Note 14)	\$ 62 111	\$ 63 855
Contractual obligations (Note 16)		

The accompanying notes and schedules are an integral part of these financial statements.

ALBERTA ENERGY REGULATOR
STATEMENT OF CHANGE IN NET DEBT
Year Ended March 31
(in thousands)

	2016		2015
	Budget (Note 3)	Actual	Actual
Annual operating (deficit) surplus	\$ (5 500)	\$ (1 744)	\$ 15 405
Acquisition of tangible capital assets (Note 13)	(9 000)	(14 196)	(20 854)
Amortization of tangible capital assets (Note 13)	11 500	12 645	11 836
Loss on disposal and write-down of tangible capital assets		332	779
Increase in prepaid expenses and other assets		(624)	(693)
(Increase) decrease in net debt	(3 000)	(3 587)	6 473
Net debt at beginning of year	(9 709)	(9 709)	(16 182)
Net debt at end of year	\$ (12 709)	\$ (13 296)	\$ (9 709)

The accompanying notes and schedules are an integral part of these financial statements.

**ALBERTA ENERGY REGULATOR
STATEMENT OF CASH FLOWS**
Year Ended March 31

(in thousands)

	2016	2015
Operating transactions		
Annual operating (deficit) surplus	\$ (1 744)	\$ 15 405
Non-cash items included in net operating results		
Amortization of tangible capital assets (Note 13)	12 645	11 836
Loss on disposal and write-down of tangible capital assets	332	779
Change in pension obligations	(1 657)	(942)
Amortization of deferred lease incentives (Note 10)	(1 522)	(1 430)
	8 054	25 648
(Increase) in accounts receivable	(5 904)	(8 353)
(Increase) in prepaid expenses and other assets	(624)	(693)
(Decrease) increase in accounts payable and accrued liabilities	(16 868)	11 929
Increase in grant payable to Orphan Well Association	38	4 305
(Decrease) in deferred revenue	(452)	(915)
Additions to deferred lease incentives (Note 10)	763	918
Cash (used) provided by operating transactions	(14 993)	32 839
Capital transactions		
Acquisition of tangible capital assets (Note 13)	(14 196)	(20 854)
Cash applied to capital transactions	(14 196)	(20 854)
	(29 189)	11 985
(Decrease) increase in cash and cash equivalents		
Cash and cash equivalents at beginning of year	54 040	42 055
Cash and cash equivalents at end of year	\$ 24 851	\$ 54 040

The accompanying notes and schedules are an integral part of these financial statements.

ALBERTA ENERGY REGULATOR NOTES TO THE FINANCIAL STATEMENTS

March 31, 2016

(in thousands)

Note 1 Authority and purpose

The Alberta Energy Regulator (AER) is an independent and quasi-judicial organization of the Government of Alberta. The AER operates under the *Responsible Energy Development Act*. The AER's mandate provides for the safe, efficient, orderly, and environmentally responsible development of hydrocarbon resources over their entire life cycle. This includes allocating and conserving water resources, managing public lands, and protecting the environment while providing economic benefits for all Albertans.

Note 2 Summary of significant accounting policies and reporting practices

These financial statements are prepared in accordance with Canadian Public Sector Accounting Standards (PSAS).

(a) Revenues

All revenues are reported on the accrual basis of accounting. Cash received for which services have not been provided by year end is recorded as deferred revenue.

Government transfers

Transfers from the Government of Alberta are referred to as provincial grants.

Provincial grants, without terms for the use of the transfer, are recorded as revenue when the transfer is authorized and the AER is eligible to receive the funds.

(b) Expenses

Expenses are reported on an accrual basis. The cost of all goods consumed and services received during the year is expensed.

(c) Valuation of financial assets and liabilities

The AER's financial assets and liabilities are generally measured as follows:

<u>Financial Statement Component</u>	<u>Measurement</u>
Cash and cash equivalents	Cost
Accounts receivable	Lower of cost or net recoverable value
Security deposits	Cost
Accounts payable and accrued liabilities	Cost
Grant payable to the Orphan Well Association	Cost

Note 2 Summary of significant accounting policies and reporting practices (continued)

The AER has not designated any financial assets or liabilities in the fair value category, has no significant foreign currency transactions and does not hold any derivative contracts. The AER has no significant remeasurement gains or losses and consequently has not presented a statement of remeasurement gains and losses.

(d) Financial assets

Financial assets are assets that could be used to discharge existing liabilities or finance future operations and are not for consumption in the normal course of operations.

Financial assets of the AER are limited to cash and cash equivalents, security deposits and financial claims on other organizations.

(e) Liabilities

Liabilities are present obligations of the AER to others arising from past transactions or events, the settlement of which is expected to result in the future sacrifice of economic benefits.

Pension

Accrued benefit obligations are actuarially determined using the projected benefit method prorated on length of service and management's best estimate of expected plan investment performance, projected employees' compensation levels and retirement age of employees.

The expected return on plan assets is determined using market values of plan assets.

Actuarial gains and losses are amortized over the average remaining service period of the active employees, which is 9.6 years.

Past service cost arising from plan amendments is accounted for in the period of the plan amendments.

Defined contribution plan accounting is applied to the Government of Alberta multi-employer defined benefit pension plans as the AER has insufficient information to apply defined benefit plan accounting. The AER is not responsible for future funding of the plan deficit other than through contribution increases.

Deferred lease incentives

Deferred lease incentives, consisting of leasehold improvement costs, reduced rent benefits and rent-free periods, are amortized on a straight-line basis over the term of the lease.

Note 2 Summary of significant accounting policies and reporting practices (continued)Liability for contaminated sites

Contaminated sites are a result of contamination of a chemical, organic or radioactive material or live organism that exceeds an environmental standard, being introduced into soil, water or sediment. The liability is recorded net of any expected recoveries. A liability for remediation of contaminated sites is recognized when all of the following criteria are met:

- an environmental standard exists;
- contamination exceeds the environmental standard;
- the AER is directly responsible or accepts responsibility;
- it is expected that future economic benefits will be given up; and
- a reasonable estimate of the amount can be made.

(f) Non-financial assets

Non-financial assets are acquired, constructed or developed assets that do not normally provide resources to discharge existing liabilities, but instead:

- are normally employed to deliver AER services;
- may be consumed in the normal course of operations; and
- are not for sale in the normal course of operations.

Non-financial assets of the AER are limited to tangible capital assets and prepaid expenses and other assets.

Tangible capital assets

Tangible capital assets are recorded at historical cost, which includes amounts that are directly related to the acquisition, design, construction, development, improvement or betterment of the assets and are amortized over their estimated useful lives using the following methods:

Leasehold improvements	Straight line	Term of the lease
Furniture and equipment	Straight line	5 – 12 years
Computer hardware	Straight line	4 – 5 years
Computer software – purchased	Straight line	4 – 5 years
Computer software – developed	Declining balance	5 years

Amortization is only charged if the tangible capital asset is put into service.

Work-in-progress, which includes developed computer software and leasehold improvements, is not amortized until a project is complete and the asset is put into service.

Note 2 Summary of significant accounting policies and reporting practices (continued)**(f) Non-financial assets (continued)**

Tangible capital assets are written down when conditions indicate that they no longer contribute to the AER's ability to provide goods and services, or when the value of future economic benefits associated with the tangible capital assets is less than their net book value. The net write-downs are accounted for as expense in the Statement of Operations.

(g) Measurement uncertainty

Measurement uncertainty exists when there is a variance between the recognized or disclosed amount and another reasonably possible amount. The amounts recorded for amortization of tangible capital assets are based on estimates of the useful life of the related assets. Accrued defined benefit obligations are subject to measurement uncertainty due to the use of actuarial assumptions. The resulting estimates are within reasonable limits of materiality and are in accordance with the AER's significant accounting policies.

(h) Change in accounting policyAdoption of net debt presentation

The net debt presentation with reclassification of comparatives has been adopted for the presentation of financial statements. Net debt or net financial assets is measured as the difference between the AER's financial assets and liabilities.

The effect of this change results in changing the presentation of the Statement of Financial Position and adding the Statement of Change in Net Debt.

(i) Future accounting changes

In March 2015 the Public Sector Accounting Board (PSAB) issued the following accounting standards:

PS 2200 Related Party Disclosure and PS 3420 Inter-entity Transactions (effective April 1, 2017)

PS 2200 defines a related party and establishes disclosures required for related party transactions; PS 3420 establishes guidance on how to account for and report transactions between public sector entities that comprise a government's reporting entity from both a provider and recipient perspective. Management is currently assessing the impact of these standards on the financial statements.

Note 2 Summary of significant accounting policies and reporting practices (continued)**(i) Future accounting changes (continued)**

In June 2015 the PSAB issued the following accounting standards:

PS 3210 Assets, PS 3320 Contingent Assets and PS 3380 Contractual Rights (effective April 1, 2017)

PS 3210 provides guidance for applying the definition of assets set out in Financial Statement Concepts, PS 1000, and establishes general disclosure standards for assets; PS 3320 defines and establishes disclosure standards on contingent assets; PS 3380 defines and establishes disclosure standards on contractual rights. Management is currently assessing the impact of these standards on the financial statements.

PS 3430 Restructuring Transactions (effective April 1, 2018)

This standard provides guidance on how to account for and report restructuring transactions by both transferors and recipients of assets and/or liabilities, together with related programs or operating responsibilities. Management is currently assessing the impact of these standards on the financial statements.

Note 3 Budget

The Budget is based on the AER Business Plan for the year ended March 31, 2016. The Budget has been approved by the Government of Alberta.

Note 4 Orphan abandonment

The AER has delegated the authority to manage the abandonment and reclamation of wells, facilities and pipelines that are licensed to defunct licensees to the Alberta Oil and Gas Orphan Abandonment and Reclamation Association (Orphan Well Association). The AER grants all of its orphan abandonment revenues (levy and application fees) to the Orphan Well Association. During the year ended March 31, 2016, the AER collected \$30 167 (2015 – \$15 000) in levies and \$944 (2015 – \$760) in application fees.

Note 5 Cash and cash equivalents

Cash and cash equivalents are held in an account with a Canadian chartered bank and earn interest calculated based on the average monthly cash balance. The funds are available to be withdrawn upon request. During the year ended March 31, 2016, the AER earned interest at the rate of 1.1% (2015 – 1.3%).

Note 6 Financial instruments

The AER has the following financial instruments: accounts receivable, accounts payable and accrued liabilities, grant payable to the Orphan Well Association and security deposits.

The AER has exposure to the following risks from its use of financial instruments:

(a) Liquidity risk

Liquidity risk is the risk that the AER will encounter difficulty in meeting obligations associated with financial liabilities. The AER does not consider this to be a significant risk as the AER collects funding at the beginning of the year to meet all obligations that arise during the year. In addition, the available credit facility provides financial flexibility to allow the AER to meet its obligations if funding cannot be collected on a timely basis.

(b) Credit risk

The AER is exposed to credit risk from potential non-payment of accounts receivable. As at March 31, 2016, the amount of financial assets that were past due was not significant and there were no material uncollectible receivable balances.

Note 7 Security deposits

The AER collects financial security under a number of different programs to protect the public from paying costs associated with abandonment and reclamation of upstream wells, facilities, pipelines, mines, mine sites and oilfield waste management facilities. The security deposits are held on behalf of licensees. The AER administers the programs in accordance with specified acts and regulations and does not have any financial risk associated with security collected. At March 31, 2016, the AER held \$138 125 (2015 – \$122 835) in cash and an additional \$1 528 339 (2015 – \$1 707 241) in letters of credit. Security, along with any interest earned, will be returned to the depositors upon meeting specified refund criteria.

Note 8 Revolving line of credit

During 2016, the AER had an unsecured \$50 000 revolving line of credit. Amounts borrowed can only be applied to general corporate purposes and exclude the funding of operating deficits and/or capital expenditures. Bank advances on the line of credit are payable on demand and bear interest at prime less 0.5%. As at March 31, 2016, the outstanding balance for the revolving line of credit was \$nil (2015 – \$nil).

Note 9 Deferred revenue

	2016	2015
Balance at beginning of year	\$ 2 056	\$ 2 971
Received during year	395	347
Less amounts recognized as revenue	(847)	(1 262)
Balance at end of year	\$ 1 604	\$ 2 056

Note 10 Deferred lease incentives

The AER has entered into various lease agreements which provide for lease incentives comprised of reduced rent benefits, rentfree periods and leasehold improvement costs. These amounts are included in deferred lease incentives and are amortized on a straight line basis over the term of the lease.

	2016			2015
	Leasehold improvement costs	Reduced rent benefits and rent-free periods	Total	Total
Balance at beginning of year	\$ 18 331	\$ 4 692	\$ 23 023	\$ 23 535
Additions during the year	763	—	763	918
Amortization	(1 195)	(327)	(1 522)	(1 430)
Balance at end of year	\$ 17 899	\$ 4 365	\$ 22 264	23 023

Note 11 Liability for contaminated sites

As at March 31, 2016, the AER is not responsible, nor has it accepted responsibility, for performing remediation work at contaminated sites. As at March 31, 2016, the AER's liability for contaminated sites was \$nil (2015 - \$nil).

Note 12 Pension

The AER participates in the Government of Alberta's multi-employer pension plans: Management Employees Pension Plan, Public Service Pension Plan and Supplementary Retirement Plan for Public Service Managers. For the year ended March 31, 2016, the expense for these pension plans is equal to the contribution of \$18 026 (2015 - \$17 325). Pension expense recorded is comprised of employer contributions to the plans that are required for its employees during the year, which are calculated based on actuarially determined amounts that are expected to provide the plans' future benefits.

In addition, the AER maintains its own defined benefit Senior Employees Pension Plan (SEPP) and two supplementary pension plans to compensate senior staff who do not participate in the government management pension plans. Retirement benefits are based on each employee's years of service and remuneration.

The effective date of the most recent actuarial funding valuation for SEPP was December 31, 2014. The accrued benefit obligation as at March 31, 2016 is based on the extrapolation of the results of this valuation. The effective date of the next required funding valuation for SEPP is December 31, 2017.

Pension plan assets are valued at market values. During the year ended March 31, 2016 the weighted average actual return on plan assets was -3.4% (11.7% in 2015).

Significant weighted average actuarial and economic assumptions used to value accrued benefit obligations and pension benefit costs are as follows:

Accrued benefit obligations	March 31, 2016	March 31, 2015
Discount rate	4.7%	4.9%
	0% for 2 years, 3.5%	0% for 1 year, 3.5%
Rate of compensation increase	thereafter	thereafter
Long-term inflation rate	2.0%	2.0%

Note 12 Pension (continued)

Pension benefit costs for the year	2016	2015
Discount rate	4.9%	5.3%
Expected rate of return on plan assets	4.9%	5.3%
Rate of compensation increase	0% for 1 year, 3.5% thereafter	3.8%

The funded status and amounts recognized in the Statement of Financial Position are as follows:

	March 31, 2016	March 31, 2015
Market value of plan assets	\$ 47 853	\$ 45 087
Accrued benefit obligations	54 639	49 510
Plan (deficit)	(6 786)	(4 423)
Unamortized actuarial loss	6 094	2 074
Pension obligations	\$ (692)	\$ (2 349)

The pension benefit costs for the year include the following components:

	2016	2015
Current period benefit cost	\$ 4 375	\$ 3 625
Interest cost	2 573	2 394
Expected return on plan assets	(2 330)	(2 110)
Amortization of actuarial losses	436	396
	\$ 5 054	\$ 4 305

Note 12 Pension (continued)

Additional information about the defined benefit pension plans is as follows:

	2016	2015
AER contribution	\$ 6 711	\$ 5 247
Employees' contribution	861	731
Benefits paid	3 216	3 350

The asset allocation of the defined benefit pension plans' investments is as follows:

	March 31, 2016	March 31, 2015
Equity securities	47.9%	49.9%
Debt securities	37.7%	38.4%
Other	14.4%	11.7%
	100.0%	100.0%

Note 13 Tangible capital assets

	2016					2015
	Land	Leasehold improve- ments	Furniture and equip- ment	Computer hardware and soft- ware	Total	Total
Estimated useful life	Indefinite	Terms of the lease	5-12 years	4-5 years		
Historical cost						
Beginning of year	\$ 282	\$ 36 055	\$ 16 154	\$ 123 999	\$ 176 490	\$ 157 359
Additions	—	2 870	759	10 567	14 196	20 854
Disposals, including write-downs	—	(218)	(1 664)	(7 698)	(9 580)	(1 723)
	282	38 707	15 249	126 868	181 106	176 490
Accumulated amortization						
Beginning of year	\$ —	\$ 7 740	\$ 9 227	\$ 96 312	\$ 113 279	\$ 102 387
Amortization expense	—	2 266	1 066	9 313	12 645	11 836
Disposals, including write-downs	—	(86)	(1 489)	(7 673)	(9 248)	(944)
	—	9 920	8 804	97 952	116 676	113 279
Net book value at March 31, 2016	\$ 282	\$ 28 787	\$ 6 445	\$ 28 916	\$ 64 430	
Net book value at March 31, 2015	\$ 282	\$ 28 315	\$ 6 927	\$ 27 687		\$ 63 211

Historical cost includes work-in-progress at March 31, 2016 totaling \$3 767 (March 31, 2015 – \$454) comprised of: computer hardware and software \$3 767 (March 31, 2015 – \$321) and leasehold improvements \$nil (March 31, 2015 – \$133).

Note 14 Accumulated operating surplus

The accumulated operating surplus of the AER is calculated as the sum of the net debt of the AER and its non-financial assets. The accumulated operating surplus represents the net assets of the AER. Accumulated operating surplus is comprised of the following:

	2016			2015
	Investments in tangible capital assets ^(a)	Unrestricted net assets	Accumulated operating surplus	Accumulated operating surplus
Balance at beginning of year	\$ 44 880	\$ 18 975	\$ 63 855	\$ 48 450
Annual operating (deficit) surplus	—	(1 744)	(1 744)	15 405
Net investment in capital assets	1 651	(1 651)	—	—
Balance at end of year	\$ 46 531	\$ 15 580	\$ 62 111	\$ 63 855

(a) Excludes leasehold improvement costs received by the AER as a lease incentive.

Note 15 Contingent liabilities

The AER, in the conduct of its normal activities, is a defendant in a number of legal proceedings. While the ultimate outcome and liability of these proceedings cannot be reasonably determined at this time, the AER believes that any settlement will not have a material adverse effect on the financial position or the results of operations of the AER. Based on legal advice, management has concluded that none of the claims meet the criteria for recording an accrued liability under PSAS.

Note 16 Contractual obligations

Contractual obligations are obligations of the AER to others that will become liabilities in the future when the terms of those contracts or agreements are met.

Estimated payment requirements for obligations under operating leases and contracts for each of the next five years and thereafter are as follows:

2017	\$	25 352
2018		20 160
2019		16 304
2020		12 506
2021		12 296
Thereafter		109 521
	\$	196 139

Note 17 Related party transactions

Related parties are those entities consolidated or accounted for on the modified equity basis in the Province of Alberta's financial statements.

The AER had the following transactions with related parties recorded in the Statement of Operations and the Statement of Financial Position at the amount of consideration agreed upon between the related parties:

	Entities in the Ministry		Other entities	
	2016	2015	2016	2015
Revenues				
Provincial grant	\$ —	\$ 19 875	\$ —	\$ —
Information, services and fees	153	150	176	136
	\$ 153	\$ 20 025	\$ 176	\$ 136

Note 17 Related party transactions (continued)

	Entities in the Ministry		Other entities	
	2016	2015	2016	2015
Expenses				
Computer services	\$ 2 124	\$ 2 122	\$ 1 714	\$ 1 167
Buildings	—	—	846	600
Administrative	—	—	1 143	933
Consulting services	—	82	290	321
	\$ 2 124	\$ 2 204	\$ 3 993	\$ 3 021
Receivable from	\$ 91	\$ 10	\$ 6	\$ 4
Payable to	\$ —	\$ 4 460	\$ 588	\$ 669

Note 18 Comparative figures

Certain 2015 figures have been reclassified to conform to the 2016 presentation.

Note 19 Approval of financial statements

These financial statements were approved by the AER Board of Directors on May 11, 2016.

ALBERTA ENERGY REGULATOR
SCHEDULE TO THE FINANCIAL STATEMENTS

Schedule 1

Energy Regulation Expenses

Year Ended March 31, 2016

(in thousands)

	2016	2015
Salaries, wages and employee benefits	\$ 180 705	\$ 178 148
Computer services	15 719	15 912
Buildings	15 198	18 016
Consulting services	13 692	19 990
Amortization of tangible capital assets	12 645	11 836
Travel and transportation	4 832	5 582
Administrative	4 373	4 133
Equipment rent and maintenance	936	1 173
Abandonment and enforcement	681	1 258
Loss on disposal and write-down of tangible capital assets	322	779
	\$ 249 113	\$ 256 827

ALBERTA ENERGY REGULATOR
SCHEDULE TO THE FINANCIAL STATEMENTS
Salaries and Benefits Disclosure
Year Ended March 31, 2016
(in thousands)

Schedule 2

Position	2016				2015
	Base salary ^(a)	Other cash benefits ^(b)	Other non-cash benefits ^(c)	Total ^(d)	Total
Board of directors					
Chairman	\$ 269	\$ —	\$ 7	\$ 276	\$ 291
Board Director	114	—	6	120	119
Board Director	117	—	1	118	117
Board Director	107	—	10	117	129
Board Director	105	—	1	106	108
Board Director ^(e)	72	—	5	77	—
Board Director ^(f)	60	—	7	67	127
Board Director ^(g)	24	—	4	28	131
Board Director ^(h)	—	—	—	—	29
Executives					
President and Chief Executive Officer ⁽ⁱ⁾	529	48	148	725	710
Chief Hearing Commissioner ^(j)	210	17	60	287	261
Executive Vice-President, Corporate Services	275	90	75	440	411
Executive Vice-President and General Counsel ^(k)	275	90	88	453	418
Executive Vice-President, Operations ^(k)	317	99	108	524	449
Executive Vice-President, Stakeholder & Government Relations	275	99	77	451	432
Executive Vice-President, Strategy & Regulatory ^(k)	275	73	38	386	414

ALBERTA ENERGY REGULATOR
SCHEDULE TO THE FINANCIAL STATEMENTS

Schedule 2 (continued)

Salaries and Benefits Disclosure (continued)

Year Ended March 31, 2016

(in thousands)

- (a) Includes retainers and per diems for Board Directors. Members of the Board of Directors do not participate in the AER's pension plans. Includes pensionable base pay for Executives.
- (b) Payments in lieu of vacation and health benefits, vehicle allowances, and short term incentive payments for Executive Vice-Presidents.
- (c) Contributions to all benefits as applicable including employer's share of Employment Insurance, Canada Pension Plan, Alberta and AER pension plans, health benefits or payments made for professional memberships and tuition fees.
- (d) Salaries and benefits for the Board of Directors are presented in descending order.
- (e) The incumbent held the position effective August 1, 2015.
- (f) The incumbent left the position effective September 30, 2015.
- (g) The incumbent left the position effective June 16, 2015.
- (h) The incumbent left the position effective June 26, 2014.
- (i) Automobiles provided, no dollar amount included in other non-cash benefits. During 2016, a relocation expense, related to home equity loss due to a required transfer of location, was paid in the amount of \$127. Relocation expenses are a normal business expense and are not considered to be compensation.
- (j) The position was held by two individuals in 2015.
- (k) Under the terms of the AER's defined benefit SEPP and two supplementary retirement plans (SRP), employees may receive supplemental retirement payments. Retirement arrangement costs as detailed below are not cash payments in the period but are the period expense for rights to future compensation. Costs shown reflect the total estimated cost to provide annual pension income over an actuarially determined post-employment period. The SEPP and SRP provide future pension benefits to participants based on years of service and remuneration. The cost of these benefits is actuarially determined using the projected benefit method pro-rated on service, a market interest rate, and management's best estimate of expected costs and the period of benefit coverage. Net actuarial gains and losses of the benefit obligations are amortized over the average remaining service life of the employee group. Current service cost is the actuarial present value of the benefits earned in the fiscal year. Prior service and other costs include amortization of past service costs, amortization of actuarial gains and losses, and interest accruing on the actuarial liability. The costs detailed below are only for those employees included in Schedule 2 who participate in the SEPP and SRP maintained by the AER to compensate senior staff who do not participate in the government management pension plans.

ALBERTA ENERGY REGULATOR
SCHEDULE TO THE FINANCIAL STATEMENTS
Salaries and Benefits Disclosure (continued)
Year Ended March 31, 2016
(in thousands)

Schedule 2 (continued)

Position	2016			2015
	Current service cost	Prior service and other costs	Total	Total
Executive Vice-President and General Counsel	\$ 39	\$ 8	\$ 47	\$ 42
Executive Vice-President, Operations	54	2	56	52
Executive Vice-President, Strategy & Regulatory	5	22	27	40

Position	Accrued obligation April 1, 2015	Changes in accrued obligation	Accrued obligation March 31, 2016	2015
Executive Vice-President and General Counsel	\$ 403	\$ 72	\$ 475	\$ 403
Executive Vice-President, Operations	125	79	204	125
Executive Vice-President, Strategy & Regulatory	1 108	67	1 175	1 108

ALBERTA ENERGY REGULATOR
SCHEDULE TO THE FINANCIAL STATEMENTS

Schedule 3

Actual Results Compared with Budget

Year Ended March 31, 2016

(in thousands)

	2016	
	Budget (Note 3)	Actual
Revenues		
Industry levies and assessments	\$ 270 093	\$ 270 335
Provincial grant		—
Information, services and fees	6 859	6 867
Investment	1 300	1 278
	278 252	278 480
Expenses		
Energy regulation	253 252	249 113
Orphan abandonment	30 500	31 111
	283 752	280 224
Annual operating (deficit)	(5 500)	(1 744)
Capital		
Capital investment	9 000	14 196
Less: Amortization	(11 500)	(12 645)
Loss on disposal and write-down of tangible capital assets		(332)
Net capital investment	(2 500)	1 219
	\$ (3 000)	\$ (2 963)

GLOSSARY ›



A **abandoned well**

A well that has been drilled, abandoned, cut, and capped at surface.

area-based regulation

A collaborative approach to energy regulation that seeks to account for the needs of individual communities and manage cumulative effects with input from stakeholders. *See also* play-based regulation.

B **bitumen**

Extra-heavy oil that in its natural states does not flow to a well. Bitumen can be sold as either upgraded or nonupgraded. Upgraded bitumen, which is typically used by refineries as feedstock, has been processed into synthetic crude oil. Nonupgraded bitumen is bitumen that is sold without any processing.

C **compliance sweeps**

A series of targeted inspections the AER does in a specific area, like Peace River; in June 2014, August 2014, November 2014, February 2015, and May 2015, compliance sweeps took place to ensure that Peace River operators were complying with new requirements for managing emissions.

continuous improvement initiative

The AER began the continuous improvement initiative to encourage employees to bring forward solutions that will improve the way we do business; employees share their ideas through an intake system and AER leadership decides whether to implement them.

cumulative effects/impacts

The total environmental changes caused by energy development activities in combination with other past, present, and future human actions.

E **emissions**

Gases that are released, intentionally or unintentionally, into the air from energy developments. The AER regulates emissions through *Directive 060: Upstream Petroleum Industry Flaring, Incinerating, and Venting*. *See also* flaring, incinerating, venting.

empathic engagement

From the Regulatory Excellence initiative, empathic engagement is an attribute that we will need to exhibit to be excellent. It means that we work together to make fully informed decision and build strong

relationships while being straightforward about issues, listening carefully and responding respectfully to our stakeholders, and ensuring our decisions are understood. We are fair, inclusive, and transparent. *See also* stellar competence, utmost integrity.

Environmental Protection and Enhancement Act

Legislation, or law, supporting and promoting the protection, enhancement, and wise use of the environment. The AER assesses applications under *EPEA* for all activities relating to energy development.

F **flaring**

The burning of natural gas that cannot be processed or sold at the end of a flare stack (i.e., a long metal pipe that gas is sent up, much like a chimney). This causes the flame associated with flaring. *See also* emissions, incinerating, venting.

full life cycle

All the stages in the life of a well, facility, project, or other energy development. The full life cycle begins with application and ends with reclamation.

H **hydraulic fracturing**

The process of pumping fluid into a well-bore to create enough pressure to crack, or fracture, the rock layer. The fluid usually contains a proppant, like sand, that helps keep the fractures open to allow oil and gas to be produced to the well.

hydrogen sulphide gas

A naturally occurring gas found in a variety of geological formations and also formed by the natural decomposition of organic matter in the absence of oxygen. H₂S is colourless, has a molecular weight that is heavier than air, and is extremely toxic. In small concentrations it has a rotten egg smell and causes eye and throat irritation.

I **inactive well**

A well that has been idle for 6 or 12 months, depending on type, but has not been suspended in accordance with *Directive 013: Suspension Requirements for Wells*.

incinerating

The mixing and combusting of waste gas streams, air, and fuel in an enclosed chamber. Air and gas are mixed at a controlled rate and ignited. No flame is visible from an incinerator that is operating properly. *See also* emissions, flaring, venting.

Integrated Compliance Assurance Framework

The framework defines the outcomes and states the guiding principles that AER staff use when undertaking compliance assurance activities. It describes the key components of education, prevention, and enforcement. It also sets out the AER's approach to ensuring effective delivery, management, and reporting of compliance activities.

Integrated Resource Management System (IRMS)

A Government of Alberta approach to managing Alberta's environment and natural resources through cooperation between various government ministries and agencies. Partners are the AER, government departments of Indigenous Relations, Energy, Agriculture and Forestry, and Environment and Parks.

L **Licensee Liability Rating Program**

An AER program that seeks to prevent Albertans from having to pay for abandonment and reclamation. The program compares a company's assets to its liabilities and requires those with greater liabilities to pay security to cover all abandonment and reclamation costs.

M **Multistakeholder Engagement Advisory Committee**

A committee formed by the AER to create more opportunities for open communication with our stakeholders and to seek input on AER initiatives. Members include environmental nongovernmental organizations, landowners, community groups, First Nations and Métis groups, and others.

N **Near-Term Action Program (NTAP)**

An AER project that aims to increase our efficiency by eliminating duplication and streamlining regulatory requirements for low-risk activities.

O **oil sands**

A mixture of sand, clay, water, and bitumen.

P **play-based regulation**

An AER project designed to give stakeholders a clearer picture of development, more effectively address cumulative effects, reduce industry's footprint by encouraging collaboration between operators, and reduce duplicative and unnecessary infrastructure. *See also* area-based regulation.

Public Lands Act

Legislation, or law, guiding the use of land owned by the province of Alberta (i.e., public land). The AER regulates energy resource development on public lands, ensuring that energy exploration, development, and ongoing operations on public lands are carried out responsibly.

R **reclamation certificate**

Reclamation certificates are required for all publicly owned land as stated in the *Environmental Protection and Enhancement Act*. Operators are required to return the land to its equivalent state—i.e., as close to its pre-project state as possible—once an oil and gas project is complete.

regulatory excellence

As defined by the University of Pennsylvania's Penn Program on Regulation, regulatory excellence embodies the attributes of utmost integrity, empathic engagement, and stellar competence.

remaining established reserves

The amount of a resource that is still in the ground. Remaining established reserves equal initial established reserves less cumulative production.

Responsible Energy Development Act (REDA)

Legislation, or law, establishing and empowering the AER. *REDA* sets out the AER's mandate, structure, powers, duties, and functions.

risk-based

The practice of focusing on higher risk areas or activities.

risk-based regulation

Part of the AER's effort to meet the demands of a new energy development landscape, risk-based regulation will allow us to be more effective by concentrating our resources on

higher-risk activities. Many of the AER's major projects, including the one application, one review, one decision approach; the Near-Term Action Program; the play-based regulation project; and area-based regulation are part of the effort to take a more risk-based approach to regulating energy development.

S **stakeholder**

Any individual, group of individuals, or organization with an interest in the outcome of a decision.

stellar competence

From the Regulatory Excellence initiative, stellar competence is an attribute we will need to exhibit to be excellent. It means that our people have the required expertise and the necessary tools to carry out their responsibilities and that we seek expertise and information outside of our organization to make well-informed decisions. We deliver outcomes, measure and report on our performance, and continuously improve. *See also* empathic engagement, utmost integrity.

subsurface order

A subsurface order is issued pursuant to section 11.104 of the *Oil and Gas Conservation Rules* and specifies rules and requirements to better suit development, production, and data gathering for specific geological zones over a defined area.

suspended well

A well at which no significant producing or injecting operations have occurred during the past 12 months.

T**tailings**

Tailings are a by-product of the process used to extract bitumen from mined oil sands and consist of water, silt, sand, clay, and residual bitumen. Sand and other heavy particles quickly separate from the water, but smaller particles of clay and silt remain in suspension, forming fluid tailings. Fluid tailings can take decades to settle and are an ongoing challenge for the oil sands mining industry. *See also Tailings Management Framework of the Mineable Athabasca Oil Sands.*

Tailings Management Framework of the Mineable Athabasca Oil Sands

Developed by the Government of Alberta to provide the AER with direction to manage fluid tailings volumes. *See also* tailings.

traffic-light protocol

An AER process that defines the stages at which operators need to take action when seismic activity occurs. Seismic events between the magnitudes of 2 and 4 require operators to report the event and activate their induced seismicity plans; events with magnitudes of 4 or greater require operators to immediately cease hydraulic fracturing operations at the affected well, while also reporting the event and activating the plan.

U**upstream**

The producing end of the energy industry. Compare “downstream” operations, which include transport, refining, and making products.

utmost integrity

From the Regulatory Excellence initiative, utmost integrity is an attribute that we will need to exhibit to be excellent. It means that we are accountable as a protective, effective, efficient, and credible regulator and that we are fair and unbiased. We adhere to government policy and take a leadership in identifying policy gaps where they exist, and we make evidence-based decisions that consider the environment, the unique nature of the energy development, traditional knowledge, and information brought forward by local communities. *See also* empathic engagement, stellar competence.

V**venting**

The intentional and controlled release of uncombusted gas. *See also* emissions, flaring, incinerating.

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