

planning, problem solving and prioritization), effective communication (i.e., presentations, meetings, emails), how to get the best out of people (coaching and influencing) and health (organizational health and personal resilience).

Safety

The safety of our people, communities and environment is one of our seven core values. At TransAlta we operate large and complex facilities. The environments in which we work, including Canadian winters and the Australian outback, often add an additional challenge to keep our employees safe. The safety of our staff, contractors, and visitors is the top priority of our social performance. Our safety culture is further embedded into TransAlta culture each year. Every meeting of more than four people starts with a “safety moment,” which helps share key safety learnings across the Corporation.

Our approach to safety was revised in 2015 from only a focus on occupational safety to a focus on both occupational safety and preventative maintenance (targeted with safety in mind). With collaboration from ScottishPower, who achieve leading safety performance, we launched our total safety management policy, which is a two-pronged approach. The policy builds on our occupational safety program, Target Zero, which is focused on protecting our workers on site, through personal protection equipment, inspections, safety controls, job safety analyses, field-level hazard assessments and safety communications. The policy is supplemented by our Operational Integrity program, which is focused on preventing all hazards from equipment, through definition and measurement of safety-critical performance measures and operating limits. Another way to think of Operational Integrity is preventative safety.

This policy and approach has led to progress and results. In 2017 our Injury Frequency Rate (“IFR”) was 0.72 (2016 - 0.85). IFR is defined as the number of injuries (lost-time and medical) for every 200,000 hours worked. Our ultimate goal is to achieve zero injury incidents, but annually we seek improvement over the prior year. Fortunately, we have experienced no fatalities during the last three years. Our target IFR in 2018 is 0.53, a 20 per cent reduction over 2017 performance.

In 2017, we introduced a new key performance indicator to help us further improve our safety performance. Total Incident Frequency (“TIF”) tracks the total number of injuries (medical aids, lost-time injuries, restricted works and first aids) relative to employee hours worked. First aids can be minor (such as a cut or scratch) nevertheless, incident awareness and understanding provide us with preventative safety knowledge, which translates into education for employees and subsequently injury avoidance. Our TIF in 2017 was 3.54. We are targeting a TIF of 2.83 in 2018, a 20 per cent reduction over 2017 performance. As noted above, our long-term goal is zero.

Year ended Dec. 31	2017	2016	2015
IFR	0.72	0.85	0.75
TIF	3.54	-	-

We reward our plants for safety leadership annually, and this year our President's Award for Safety Leadership went to the Ottawa Health Sciences Centre Cogeneration Team. Our cogeneration facility in Ottawa supports the Ottawa Hospital. This facility and its team have logged zero lost-time injuries for more than six years — and the effort didn't only come from our employees. More than 100 contractors, logging more than 50,000 contractor hours, completed their work without a single lost-time injury. Our team at our Sarnia facility also displayed great safety leadership in 2017. The team had 300,000 worker exposure hours in 2017 without injury and has had 1.15 million exposure hours since an injury last occurred.

Intellectual Capital

Intellectual capital at TransAlta is another key to value creation. Our employee culture is supported by a long-term and sustainable approach, as evidenced by over 100 years in business. A long-term commitment lends itself to goodwill and brand recognition, something we value and don't take for granted. We believe our low cost and clean power strategy, supported by our internal values and sustainable approach to business, will help support and continue to increase our brand recognition positively.

The experience and acumen of our employees further enhances our capital value creation. This is evidenced by our 18-month ongoing internal transformation, called Project Greenlight. This project is focused on bottom-up innovation, specifically fostering a culture of idea generation, development of ideas into projects with defined KPIs, milestones and

execution or delivery dates, and ongoing project management to ensure success. Where we fail, we idea generate, build and test again. Since inception, we have completed 900 bottom-up initiatives.

We believe that global marketplace disruption is here to stay and we recognize that to adapt to the pace of change and remain competitive, our employees must be nimble, adaptive and work smarter and faster. For further details on our investment in our workforce, please see the Talent and Employee Development discussion in the Human Capital subsection of this MD&A.

In addition, our teams continuously explore the use of applied or new technologies to find solutions to expand or adapt our fleet in an ever-changing world, which helps protect our shareholder value and maintain delivery of reliable and affordable electricity.

The following are further examples of how we have developed innovative solutions to optimize and maximize value from our fleet:

Operations Diagnostic Centre

TransAlta has run its Operations Diagnostic Centre ("ODC") since 2008. The ODC monitors coal-fired, gas-fired, and wind-generating assets across Canada, the United States, and Australia. A centralized team of engineers and operations specialists remotely monitors our power plants for emerging equipment reliability and performance issues. ODC staff are trained in the development and use of specialized equipment monitoring software and can apply their experience in power plant operations. If an equipment issue is detected, the ODC notifies plant operations to investigate and remedy the issue before there is an impact to operations. The monitoring, analysis, and diagnostics completed by the ODC are focused on early identification of equipment issues based on longer-term trend analysis and complements day-to-day plant operations.

Operational Integrity Program

Our Operational Integrity program is the integration of sustainability, specifically safety, into asset management. It is a program designed to achieve process and equipment safety by understanding and monitoring of key operational risks and implementation of mitigation measures. Consider it proactive safety. In 2017, we put into place our Total Safety Management System, which integrates our work in Process Safety with our existing strength in Occupational Safety programs. We continue to see a positive increase in self-reporting and addressing process safety hazards as awareness and new tools are being introduced. This is evidenced by our trend in safety incidents, which decreased in 2017 to an IFR of 0.72 (0.85 in 2017). This was one of our best safety performance years in our history. Our goal is zero and the Operational Integrity program is a tried and tested tool to help propel us closer to this goal.

Innovation: Applied Technologies

TransAlta has been at the forefront of innovation in the power generation sector since the early 1900s when we developed hydro assets. To add context, these assets were developed at the same time as the automobile. We have been an early adopter and developer of wind technology in Canada and today are the largest wind generator in the country. Today we run a Wind Control Centre, the only one of its kind in Canada, that monitors, to the second, each and every wind turbine we operate across North America. In 2015, we made our first investment in solar technology with the purchase of a 21 MW solar facility in Massachusetts.

As we move towards our vision of becoming the leading clean power corporation in Canada by 2030 we continue to seek solutions to innovate and create value for investors, society and the environment. This is evidenced by our announcements of the accelerated coal-to-gas conversion plans, the expansion of our Kent Hills wind farm in New Brunswick, the proposed solar development in New South Wales, Australia, and the exploration of our proposed Brazeau hydro expansion, a 600-900 MW pumped hydro expansion that will double our hydro capacity in Alberta. Hydro is a clean alternative to both coal and gas and has long-term life. We still operate some of our legacy hydro assets from the early 1900s today.

We strive to keep up to date with power technologies that have the potential to redefine power markets today and in the future. Innovation is constantly happening on a more micro scale at TransAlta. For further communications on innovation at TransAlta, please visit www.transalta.com/about-us/innovation.