

# Welcome

to the Sundance 7  
Open House

# Introducing TAMA Power

TransAlta Corporation and MidAmerican Energy Holdings Company joined forces to create the TransAlta MidAmerican Partnership (“TAMA Power”) in October 2012.

Focused on building, owning and operating “gas fired” power projects in Canada

- Build long-term value

Both partners bring strong financial resources and technical expertise to the table

- Develop projects in complex markets
- TransAlta taking the lead to construct and operate power plants
- Both companies committed to supporting the regions and communities where we do business



TransAlta is a power generation and wholesale marketing company currently operating a portfolio of assets in Canada, the United States and Australia. For over 100 years TransAlta has been a responsible operator and proud contributor to the communities in which it works and lives.

TransAlta has extensive experience operating natural gas fuelled generating facilities. These facilities are located in Fort Saskatchewan and Fort McMurray, Alberta; Ontario and Western Australia.



MidAmerican Energy Holdings Company, based in Des Moines, Iowa, USA, is a global provider of energy services. Through its energy-related businesses, MidAmerican provides electric and natural gas service to more than 7 million customers worldwide. These businesses are Pacific Power, Rocky Mountain Power and PacifiCorp Energy, comprising PacifiCorp; MidAmerican Energy Company; Northern Powergrid Holdings Company; Northern Natural Gas Company; Kern River Gas Transmission Company; MidAmerican Renewables, LLC; MidAmerican Transmission, LLC; and CalEnergy Philippines.

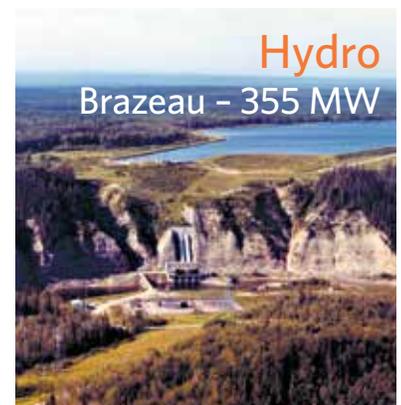


# TransAlta's Role in Alberta's Energy Economy

Electricity is fundamental to Alberta's economic growth and prosperity and TransAlta has played a pioneering role in generating and delivering electricity for Albertans for more than 100 years.

TransAlta provides an essential service to Albertans by producing a safe and secure supply of power that is reliable and economical, and includes both traditional and renewable generation sources.

We have in-depth experience as a responsible operator of power plants - whether their fuel source is coal, natural gas, wind or hydro. In Alberta we fully own or are partners in a diverse fleet that includes natural gas, coal, wind and hydro facilities.

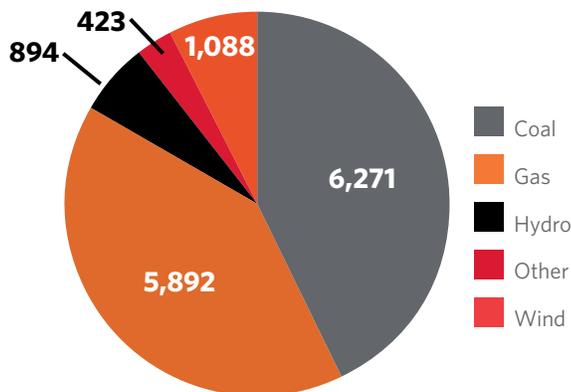


# Project Need

## Electricity generation in Alberta

- Alberta has more than 14,568 megawatts (MW) of installed electricity generation capacity
- By 2022, the Alberta Electric System Operator (AESO) is forecasting Alberta will have a total installed capacity of 20,663 MW due to growth in the Alberta market. This is 6,000 more MW than is online today.
  - By the end of 2019, more than 850 MW of coal generation capacity is expected to retire due to federal greenhouse gas regulations, increasing the need for additional generation capacity.

## Current Generation Capacity Mix in Alberta (MW)

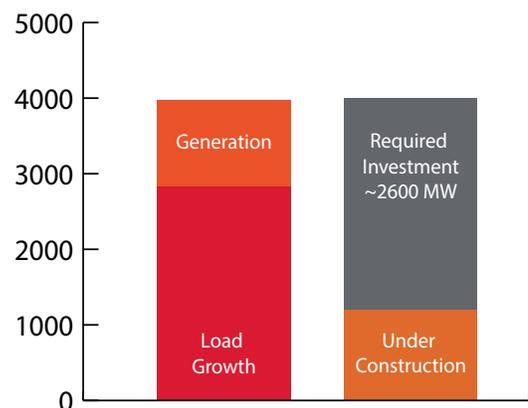


Source: Alberta Electric System Operator

## We're building for the future

- Alberta is the fastest growing economy in Canada with \$200 Billion in capital projects planned or underway in the province
- Demand for electricity has steadily grown since 2001, equivalent to adding two cities the size of Red Deer each year
- Alberta's population is expected to increase to 5.1 million by 2032
- Key projections from the AESO 2012 Long-term Outlook Update\*<sup>1</sup> for Alberta include the following:
  - 4.2 per cent average annual growth in demand for electricity until 2017
  - 3.6 per cent average annual growth in demand for electricity thereafter until 2022
- Generation Capacity Mix in Alberta is forecasting an increase in gas generation from the current total of 40 per cent to 62 per cent by 2032

## Required Generation Investment by 2020



# Project Location

Sundance 7 will be located in Parkland County, east of the Sundance Generating Station and the Sundance Cooling Pond, on the south side of Lake Wabamun.



## Site layout

Specifically, the facility will be built on Section 10, Township 52, Range 4, West of the 5<sup>th</sup> Meridian. The plant footprint is 17 acres (6.8 hectares) and the project footprint to the fence line is approximately 110 acres (44.5 hectares).



# Sundance 7: A Power Plant for the Future

- The Sundance 7 project will be an essential addition to the Alberta electricity market to meet the province's long-term supply needs.
- Sundance 7 will be a source of reliable, efficient and economical power for Albertans and is an environmentally responsible choice for electricity.



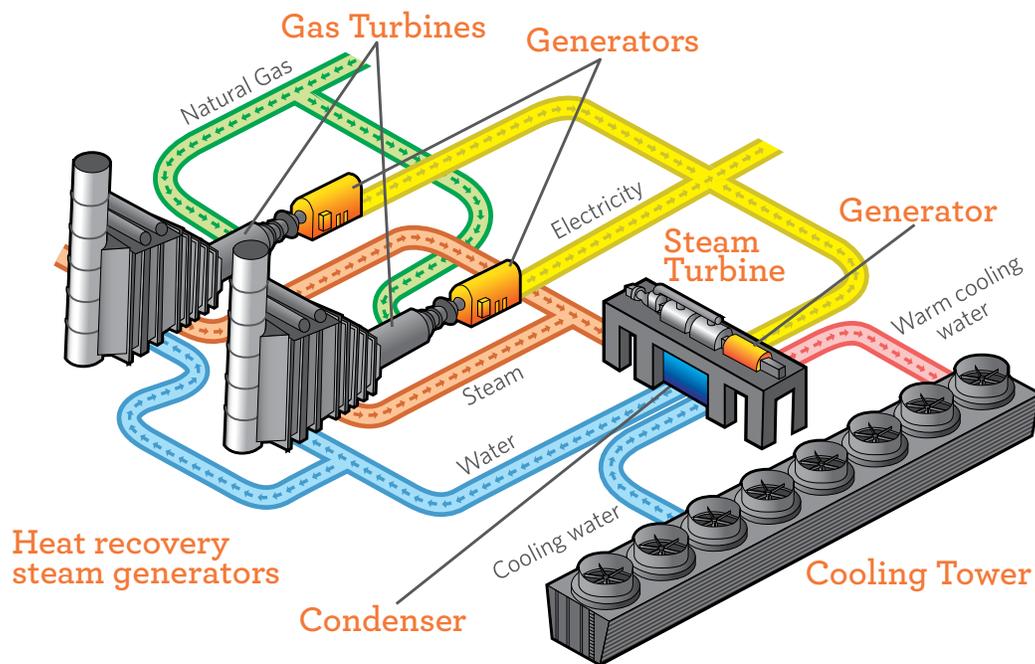
## SUNDANCE 7 PROJECT FACTS:

- A combined-cycle natural-gas generation facility
- An average net generation capacity of 834 megawatts (MW), the plant will generate enough electricity to power approximately 720,000 Alberta households
- Pipeline to site for natural-gas supply
- Transmission infrastructure connecting substation to the Alberta Interconnected Electrical System
- Site construction: approximately 3 years from 2015 - 2018
- Construction workforce: 400 - 600 workers; 1.8 million construction hours
- Investment in Alberta economy: approximately \$850 million



# Combined-cycle power generation

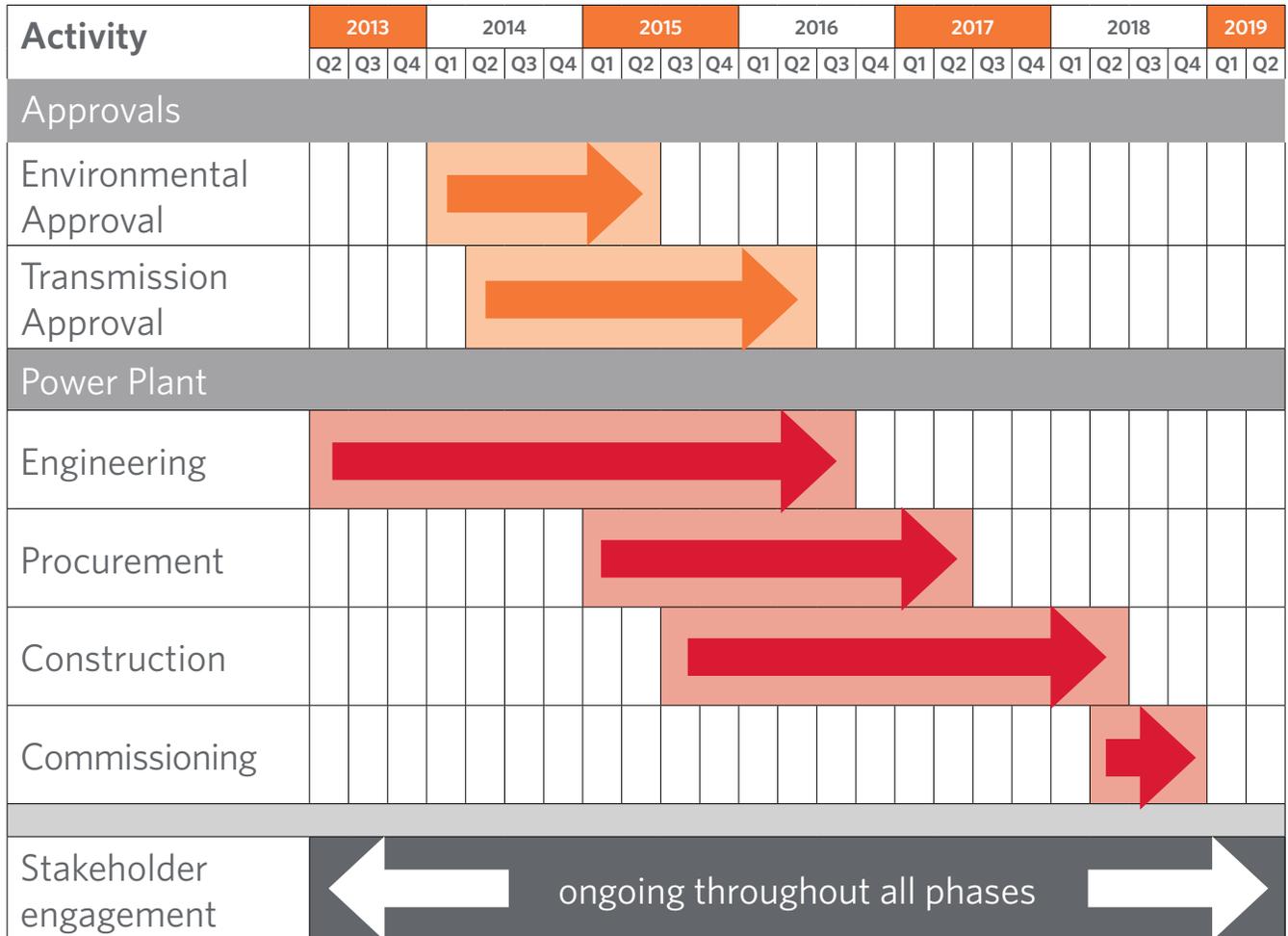
Sundance 7 will generate electricity using combined cycle technology with modern generation equipment and advanced air-emission control systems.



Sundance 7 will include two natural gas combustion turbine generators to produce electricity. The hot exhaust gases will not be immediately vented to the atmosphere but will instead be used to create steam through the heat recovery steam generators (HRSGs).

This steam in turn feeds a steam turbine generator resulting in the production of additional electricity, increasing the efficiency of the plant. Once the steam runs through the steam turbine it is condensed and returned to the HRSGs for re-use in the process.

# Sundance 7 Project Schedule



TAMA Power is planning to file applications to Alberta Environment and Sustainable Resource Development, the Alberta Utilities Commission and the Canadian Environmental Assessment Agency in the second quarter of 2014.

Currently, a Request for Information is underway to support the selection process for an Engineering, Procurement and Construction (EPC) contractor. The selection process for the EPC contractor will be completed in 2014.

After receiving the required approvals, it is expected that construction will start in 2015, to be completed by mid-2018.



# Sundance 7: A Power Plant for the Future

## Sundance 7 project benefits

- A source of reliable, highly-efficient, low-cost and clean electricity
- Project footprint is minimized by using state-of-the-art power generation technology, utilizing existing infrastructure where possible
- Reflects TransAlta's long-term commitment to the Lake Wabamun region by continuing to support local employment and business opportunities for generations to come

## Sundance 7 features

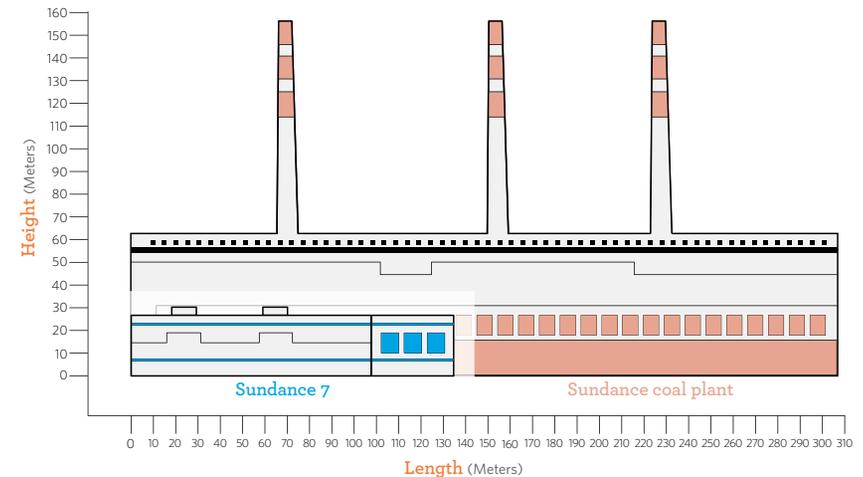
Sundance 7 will be designed to take advantage of existing infrastructure as much as possible, including the Sundance Cooling Pond, and water intake and discharge structures at the North Saskatchewan River. This will reduce the amount of land that is developed.

Other features that will be incorporated into the design of Sundance 7 include the following:

- two natural gas turbine generators, equipped with dry-low emissions systems
- two heat recovery steam generators (HRSG) equipped with a selective catalytic reduction (SCR) system designed to control nitrogen oxide (NOx) emissions
- one condensing steam turbine generator (STG)
- two continuous emission monitoring systems (CEMS) on the HRSG stacks
- an auxiliary boiler
- a multi-cell mechanical draft evaporative cooling tower
- a water treatment facility
- an onsite wastewater management system
- transmission infrastructure connecting the substation to the Alberta Interconnected Electrical System
- a natural gas pipeline system



## Comparison of Sundance 7 in relation to Sundance Generating Station



# Traffic Study

A Traffic Impact Assessment was completed in the fall of 2013 to assess the impact of the traffic generated by the Sundance 7 project on the adjacent road network (road corridors and intersections).

The following were examined:

- Identify the areas of traffic impact and expected changes in traffic volumes, composition and type within the study area
- Perform a volume and capacity analysis at the intersections of:
  - Highway 770 and Highway 627
  - Highway 627 and Paul Band Road (Range Road 42)
- Identify deficiencies in the existing transportation infrastructure in the immediate vicinity of the project site

## The assessment:

- The Traffic Impact Assessment documented observations of the existing traffic, analyzed the impact of the additional traffic generated during the construction and operation of the proposed project
- Traffic operation analysis was carried out for the peak construction year of 2017 and a 20 year horizon to 2033 for both morning and afternoon peak hours

- Intersection improvement warrant analysis was completed based on Alberta transportation's Highway Geometric Guide



Roadway network and intersection configuration

## Results of the study:

- Both Highway 627/ Highway 770 and Highway 627/ Paul Band Road intersections have adequate intersection treatments for the projected traffic volume in both project construction year (2017) and operations horizon (2033)
- Traffic will operate at an acceptable level of service at both intersections in 2017 and 2033
- The project generated traffic will have limited impact on the traffic at the two main intersections in both the construction period and the design horizon year