

# SaskPower Supply Plan

Presented to:

Energy Management Task Force

September 10, 2008

# SaskPower Mission

We deliver power in a safe, reliable and sustainable manner.

# SaskPower Realities

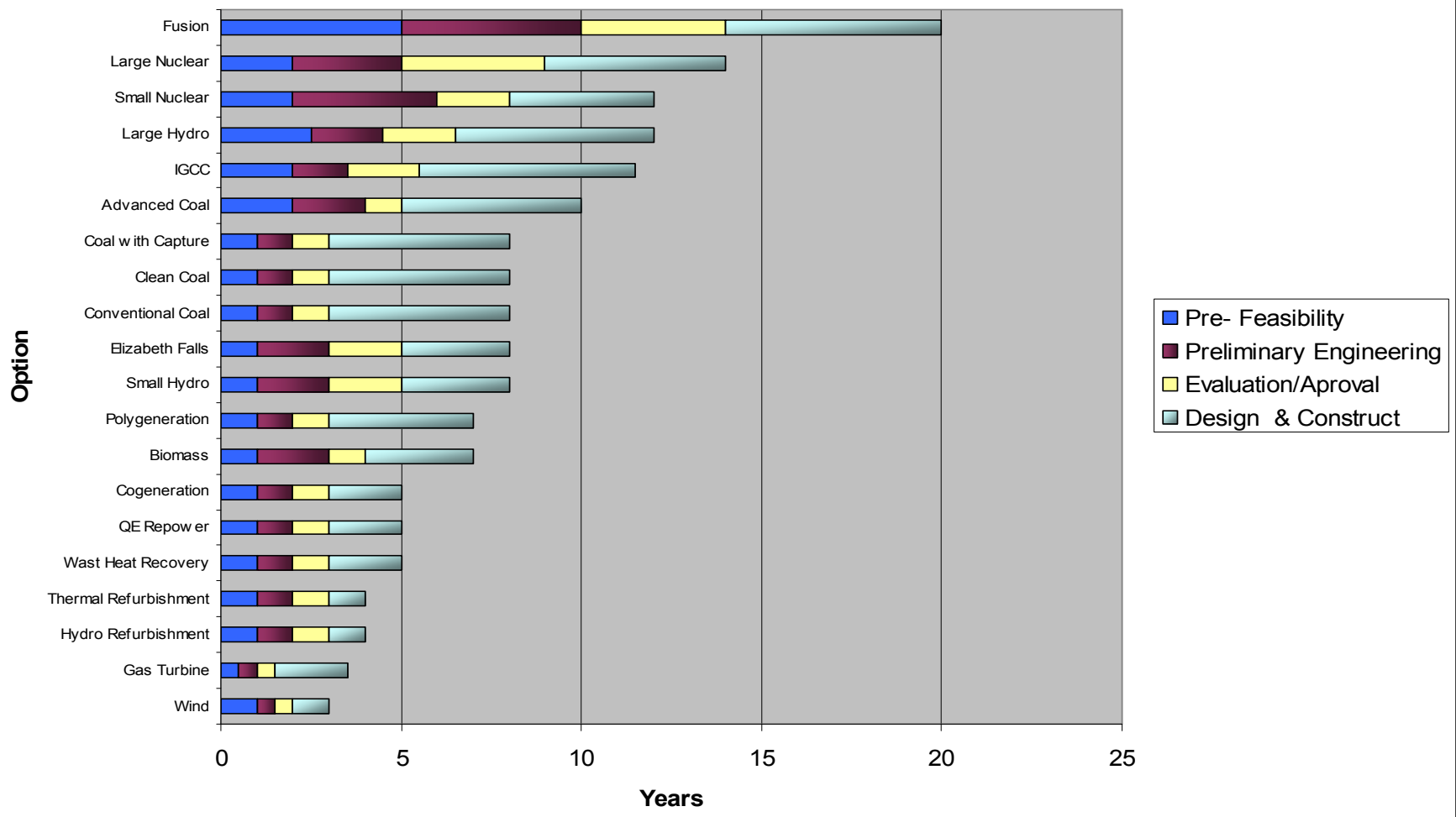
- Legislated obligation to serve;
- Assets are expensive;
- Assets are long-lived;
- We're making decisions today that we'll live with for a considerable time.

# SaskPower Supply Objectives

Ensure that SaskPower has sufficient supplies to meet domestic load at the lowest-long term cost reflecting:

- Acceptable Service Quality;
- Financial Responsibility;
- Environmental Responsibility;
- Social License (reputation, public trust, acceptance of analyses and recommendations, support for new initiatives.)

# Supply Option Timelines



# Emission Challenges

- Provincial Government target is to reduce GHG emissions by 32% by 2020
- Federal Government Clean Air Act
  - Seeks to regulate GHG emissions as well as SO<sub>x</sub>, NO<sub>x</sub>, particulates, and Mercury;
  - Target is to reduce Canadian GHG emissions by 20% by 2020
  - Announced substantially more aggressive targets for the electricity sector in March 2008
- Regulations will be drafted this fall.

# Recent Supply Decisions

- 1) Implement several supply initiatives:
  - Install up to 400 MW Simple Cycle Gas Turbines;
    - 94 MW Gas Turbine Facility at Ermine
    - 105 MW Gas Turbine retrofit at Queen Elizabeth plant
  - Further announcements are pending.
- 2) Adopt a Renewable Portfolio Standard:
  - A third of supply from renewables by 2020.
  - Will update in 2009 Business Plan
  - Assessing the impact of recent load growth

# Recent Supply Decisions

## 3) Assess a Renewable Energy Strategy:

- Continue seeking renewable supply options;
- Heat Recovery and Biomass initiatives;
- Hydro;
- Wind Power;
- Net Metering;
- Demand-Side Management program.

## 4) Continue investigating supply options.



# SaskPower Planning Horizons

1. Short-Term Plan – Present to 2014
  - In process of execution.
  
2. Medium-Term Strategy – 2014 to 2020
  - In process of refinement.
  
3. Long-Term Strategy – 2020 and beyond
  - In process of refinement.

## 2010 to 2014 Key Challenges

- Saskatchewan's economy is growing and so is the SaskPower load;
  - 400 MW increase in load forecast by 2014 over the past 18 mo
- Need about 1000 MW of plant refurbishments/new supplies by the end of 2014;
- Delivery of planned DSM load reductions;
- Pressure on construction costs and longer lead times;
- Implement a plan for renewable energy.

## 2010 to 2014 Supply Plan/Strategy

- Install Simple-Cycle Gas Turbines;
- Reinforce the transmission system through effective siting;
- Begin DSM investments;
- Pursue customer curtailment & imports;
- Issue Wind Power Deployment Strategy;
- Develop BD3 Clean Coal Project;
- Issue RFP's
  - Up to 200 MW of SCGT's by Dec 2011
  - Up to 400 MW of Base Load supplies by Dec 2012

# SaskPower Eneraction

- Responds to concerns from among customers about higher energy prices and environmental impacts;
- Initial focus on energy efficiency and conservation measures;
- Will develop into load management programs for large customers.

# SaskPower Eneraction

- Residential lighting program is the current focus;
- An average household has about 40 light bulbs, which accounts for about 21 per cent of household electricity use per month;
- Each household replacing just one 60-watt incandescent bulb would save power for 5,600 homes for one year.

## 2015 to 2020 Key Challenges

- Need about 600 MW of new supplies/plant refurbishments;
- Continued implementation of the RES;
- Belle Plaine Polygeneration Project opportunity;
- Emerging emissions regulations;
- Natural gas price and volatility;
- Pressure on labour and equipment costs.

## 2015 to 2020 Supply Strategy

### 1) Pursue IPP supply options:

- Hydroelectric;
- Biomass and Heat Recovery;
- Natural gas;
- Wind;
- Belle Plaine Polygeneration Project;
- Other.

## 2015 to 2020 Supply Strategy

2. Continue to develop a suite of SaskPower supply options for that time period:
  - SaskPower Clean Coal Project;
  - Hydroelectric projects;
  - Wind;
  - Simple Cycle Natural Gas;
  - Combined Cycle Natural Gas options;
  - Imports.



## 2021 to 2030 Supply Strategy

### *Key Challenges:*

- 1) Meridian and Cory PPA's expire – extension or renewal.
- 2) Emissions regulations are expected to tighten.
- 3) Potential for natural gas price volatility.
- 4) Construction and equipment markets.

# Supply Strategy - Long-term

1. Make decisions about existing facilities.
2. Expire, extend or replace Meridian and Cory PPAs.
3. Make timely decisions on new supplies from the following options:
  - Advance Combustion Clean Coal;
  - Integrated Gasification Combined Cycle (coal or other fuels);
  - Natural Gas Combined Cycle;
  - Polygeneration;
  - Sustainable IPP Supplies (Green);
  - Large Scale Hydro;
  - Nuclear;
  - Imports;
  - Other?

# Future Supply Planning

- Define the strategic direction for future supply decisions;
- Assess the key issues affecting future generation decisions including GHG emissions;
- Determine optimal staging of the options;
- Integrate supply plans with the long-term Transmission and Distribution plan.