

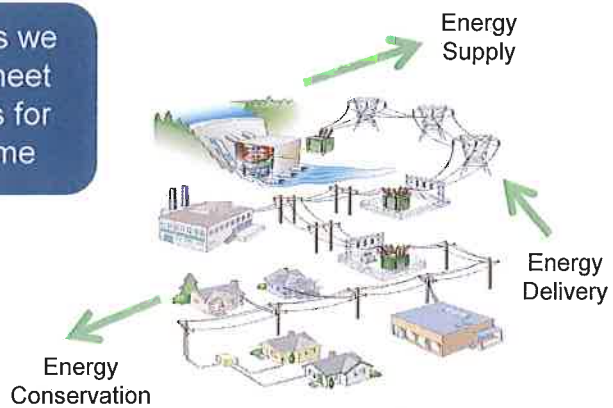
FortisBC Integrated System Plan

February 2011



The ISP: A balanced framework for the future

The ISP ensures we will be able to meet customer needs for decades to come



The FortisBC ISP:

A balanced framework for the future

1. The challenge: planning today to meet customer needs for decades to come

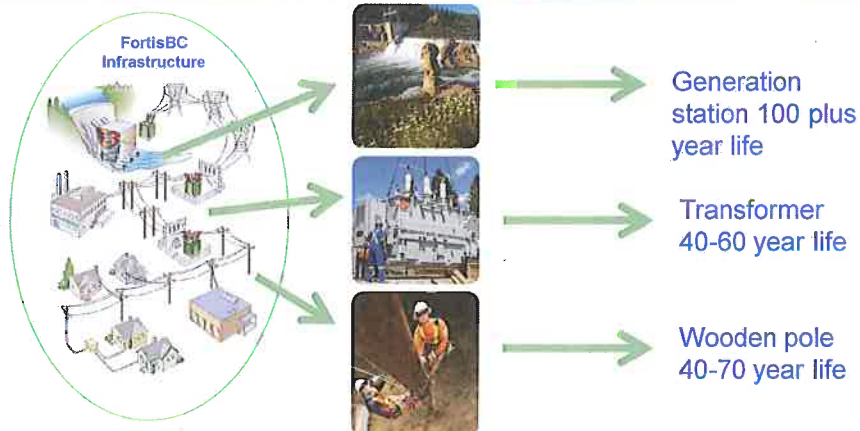
We must consider how we:

- Can maintain existing infrastructure
- Meet growing demand for reliable electricity
- Meet dynamic public policy requirements
- Manage bill impacts
- Hear and act on customer input and priorities

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FORTISBC

1. Planning today for the future
...So we can maintain our existing infrastructure



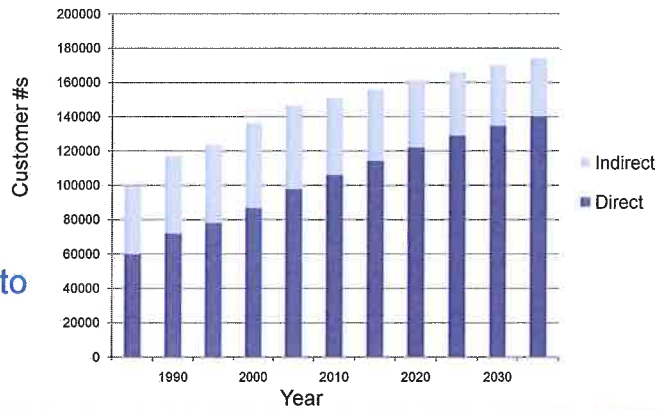
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FORTISBC

1. Planning today for the future
 ...So we can meet growing demand from customers

Customer growth...

...is expected to continue in coming years



1. Planning today for the future
 ...So we can manage bill impacts

We know that every investment must be prudent...

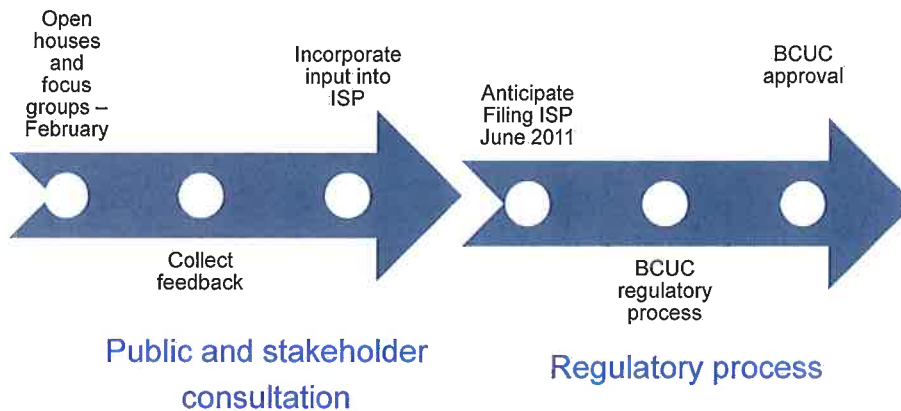
...because it will impact the bill.

Approx.

5km of transmission line	= 0.1% rate impact
New substation	= 0.5% rate impact
50 MW generation plant	= 2.5% rate impact

So before we build we consider the impact to your bill

1. Planning today for the future ...So we seek out your input and priorities



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The FortisBC ISP: A balanced framework for the future

1. The challenge: planning today to meet your needs for decades to come
2. The response: the ISP is a balanced framework for:
 - Addressing growth
 - Ensuring prudent and sustainable system maintenance
 - Improving customer service levels
 - Flexibility to meet dynamic public policy requirements

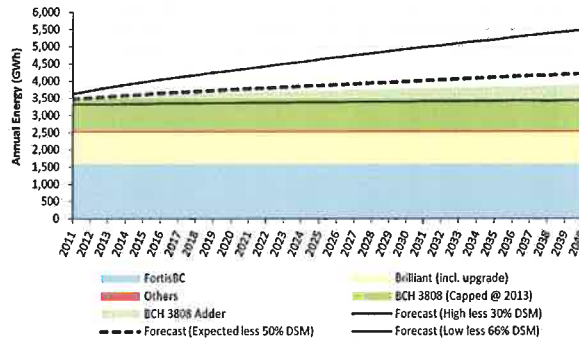
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2. The ISP is a balanced framework... For addressing growth

We began by forecasting load growth over the next 20 years – and our ability to meet it

Big picture:
We have
forecast overall
growth in load
...



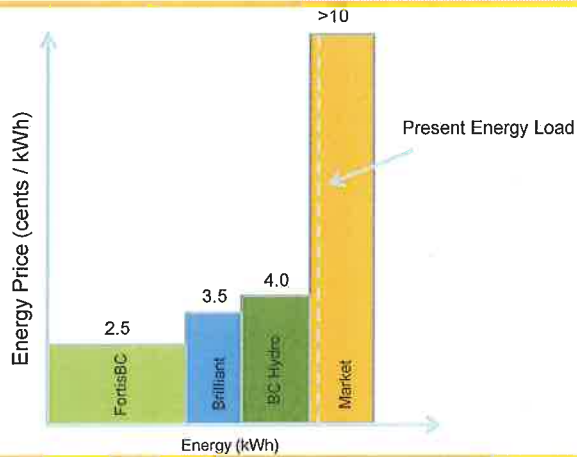
... and found
we will need
more energy
to meet
growth

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2. The ISP is a balanced framework... For addressing growth

New power supply
costs significantly
more than existing
power supply



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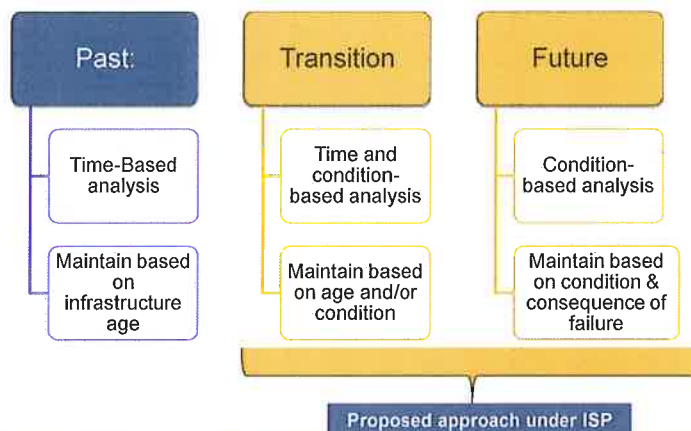
2. The ISP is a balanced framework... For addressing growth

- Big Picture:
 - Power purchase from the Waneta expansion will reduce need for new generation infrastructure
 - Determined that we need to have supply insurance (planning reserve margin)
 - Committed to continued expansion of our conservation programs (e.g. PowerSense)
- Local Picture:
 - Increase capacity at existing locations through station upgrades
 - Increase capacity with new station south of Penticton

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2. The ISP is a balanced framework... For ensuring our system serves customers for years



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2. The ISP is a balanced framework...
For improving service levels

Advanced Metering Infrastructure


- Providing customers with better information about their energy usage
- Helping customers manage their energy use



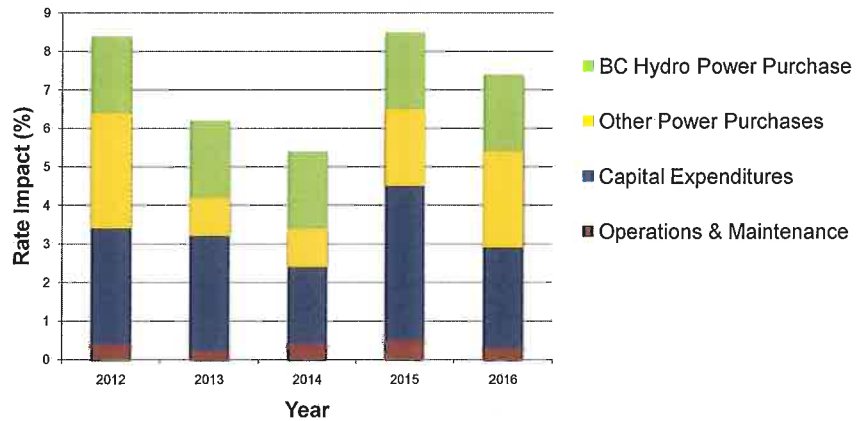
2. The ISP is a balanced framework...
For improving service levels

By helping customers use information to manage their energy use



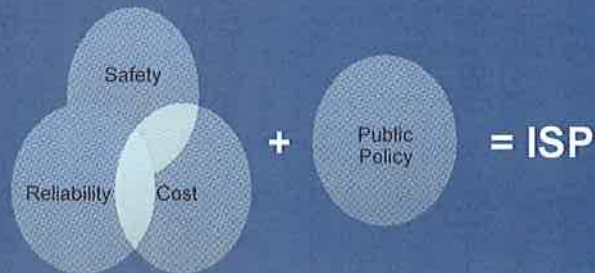
No cost  Higher cost
Spectrum of PowerSense programs help customers reduce use

The ISP is a balanced framework for the future
Estimated rate increases



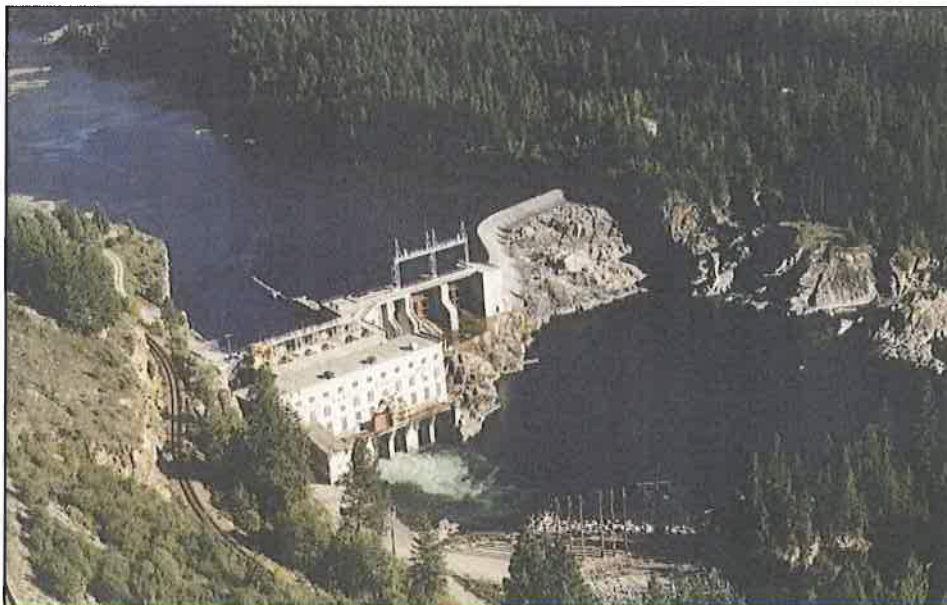
The FortisBC ISP:
A balanced framework for the future

- I. The challenge: planning today to meet your needs for decades to come
- II. The Response: the ISP is a balanced framework



Your views are important

- ***Give us your feedback form before you leave!***
 - Contact us at:
 - Website: www.fortisbc.com or www.bcuc.com
 - E-mail: FBCisp@fortisbc.com
 - Phone: 1-866-4 FORTIS (1-866-436-7847)
 - Mail: Attn: Integrated System Plan, Suite 100 – 1975 Springfield Road, Kelowna, BC, V1Y 7V7
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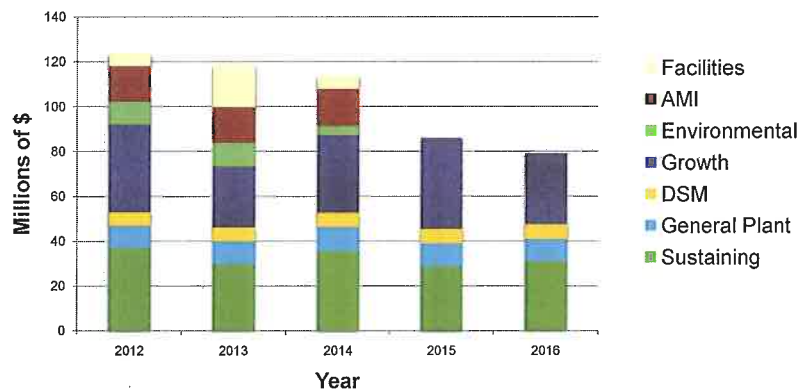


FortisBC
Providing electricity to southern interior for 100+ years

- A regulated utility based in Kelowna, BC, established in 1897
- Serves approximately 161,000 customers
- Owns and operates four generating plants
- Employs over 500 people
- Wholly owned subsidiary of Fortis Inc.



The ISP is a balanced framework for the future
Forecast capital expenditures



Welcome to our open house

Thanks for coming

Please sign in and help
yourself to refreshments



Energizing your community

www.fortisbc.com

FORTISBC

Integrated System Plan (ISP)

Looks ahead 20 years to identify the energy and infrastructure needs of our customers — then sets out a five-year business plan to meet these needs.

- Identifies what projects are needed to meet future growth and sustain existing infrastructure
- Outlines energy efficiency and conservation measures
- Your input is important



Anticipated ISP timeline

Consultation



- 1** Public input deadline February 25
- 2** Public, stakeholder and First Nations Consultation February – March 2011
- 3** Finalize ISP May 2011

Regulatory process



- 4** File ISP with BCUC June 2011
- 5** BCUC review process Fall 2011
- 6** BCUC decision late 2011

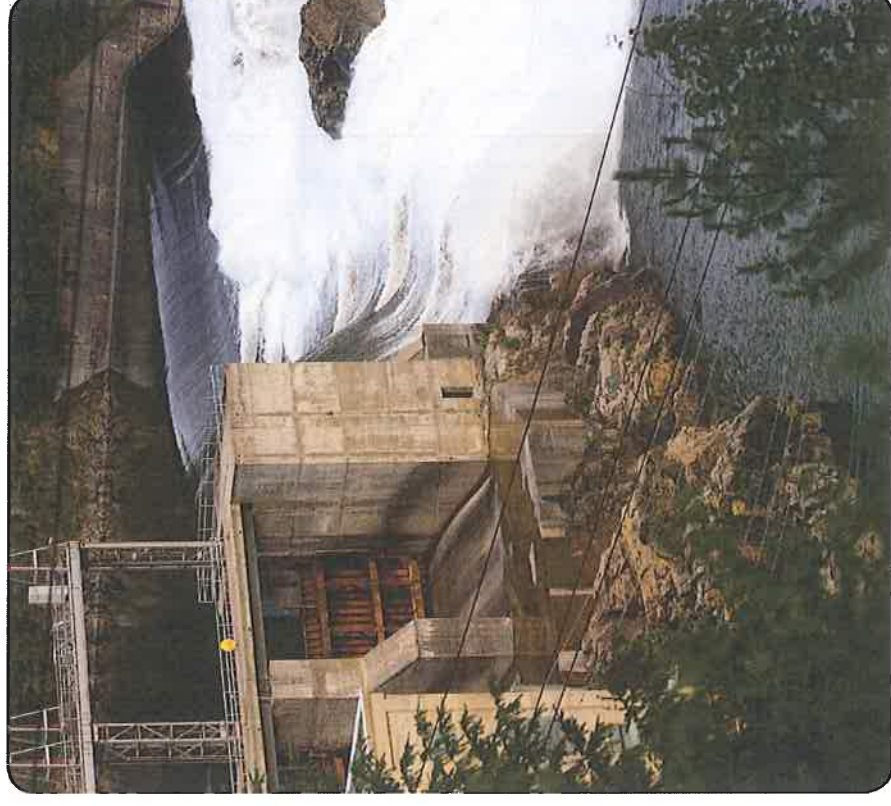
Planning for future power supply

2011 Resource Plan:

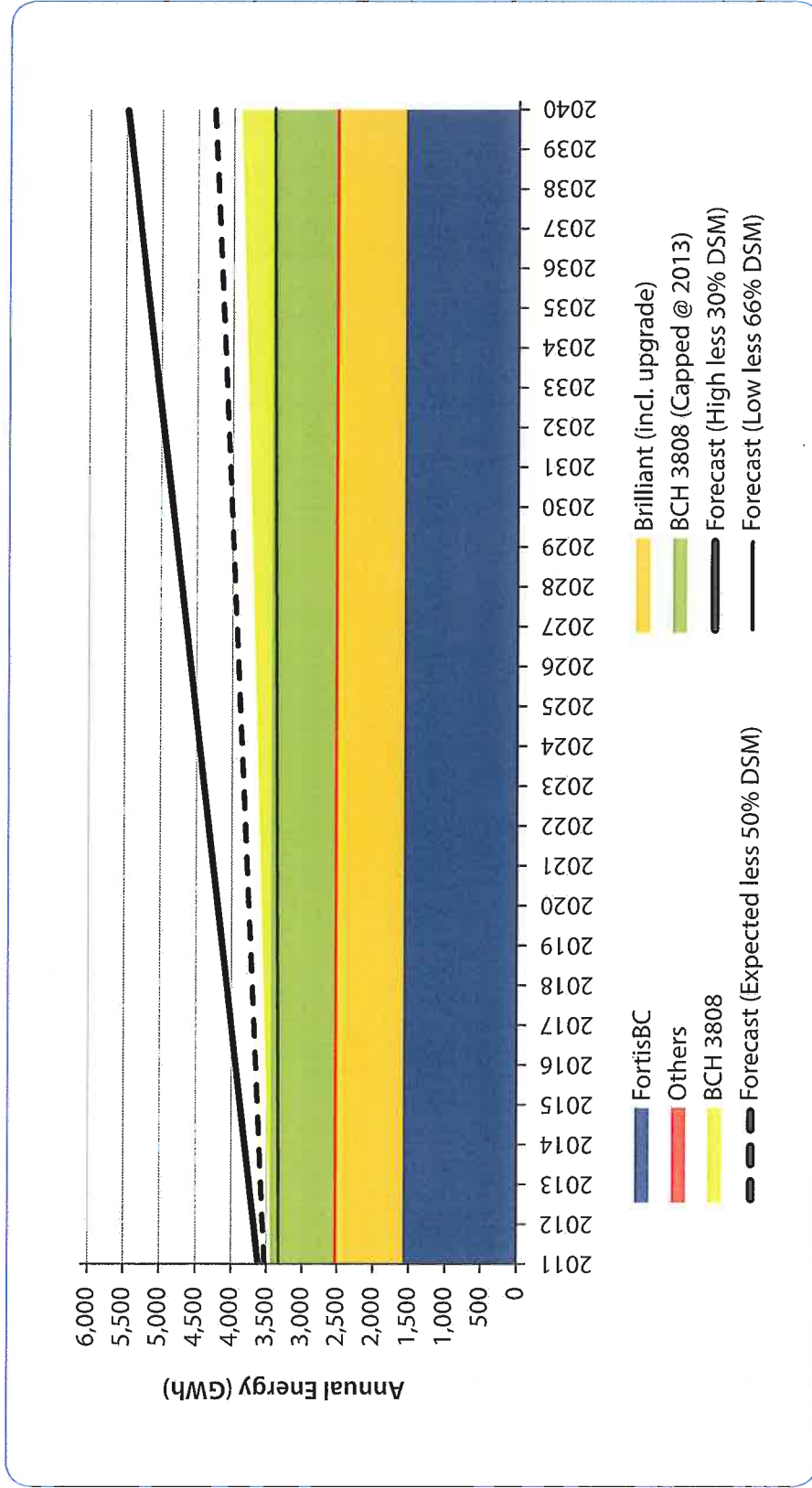
- Looks at the next 30 years to identify shortfalls and investigate future options
- Planning now is critical for the future – new generation can take decades to plan and acquire

Resource Plan goals:

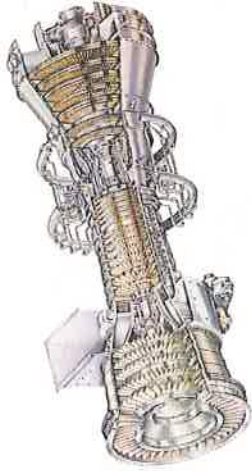
- Ensure long-term reliable power for customers through acquisition of sufficient firm resources
- Reduce uncertainty and risks in current strategy which includes purchases power from the market
- Balance cost effectiveness with the directions and policy actions of the Clean Energy Act



Annual energy resource / Load gap (GWh)

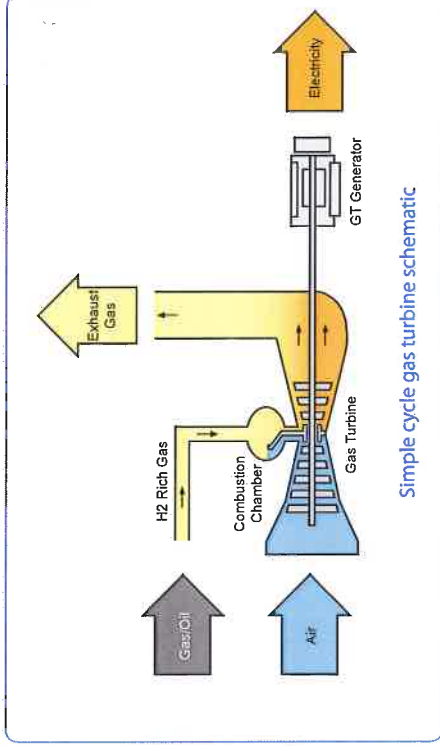


Power supply resources examples



Turbine

Simple cycle gas turbine

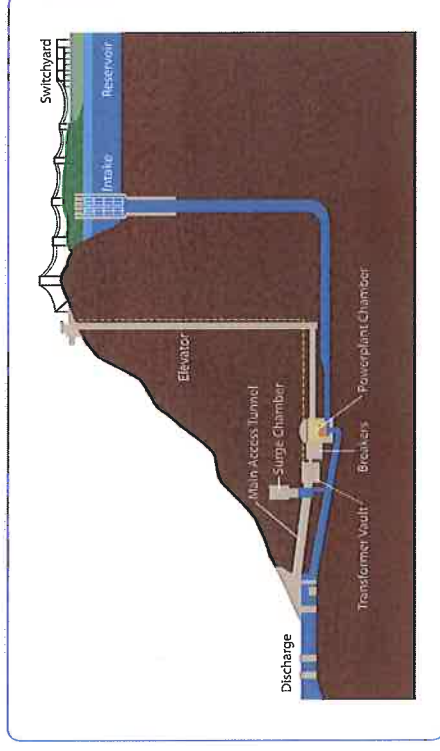


Small hydro



BC Hydro's Aberfeldie

Pumped storage hydro



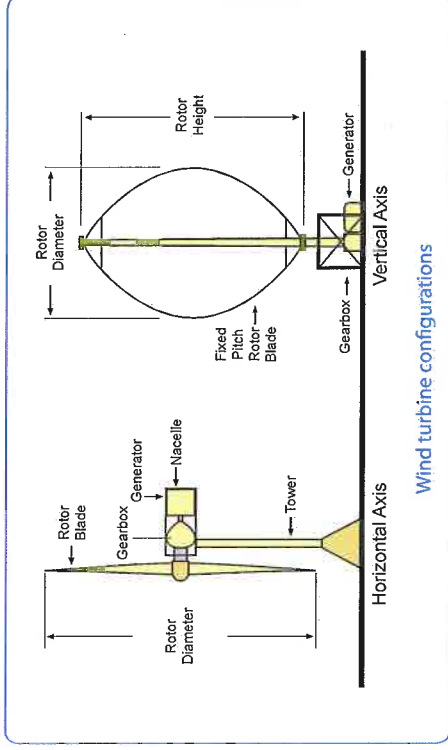
Seneca, PA

Power supply resources examples



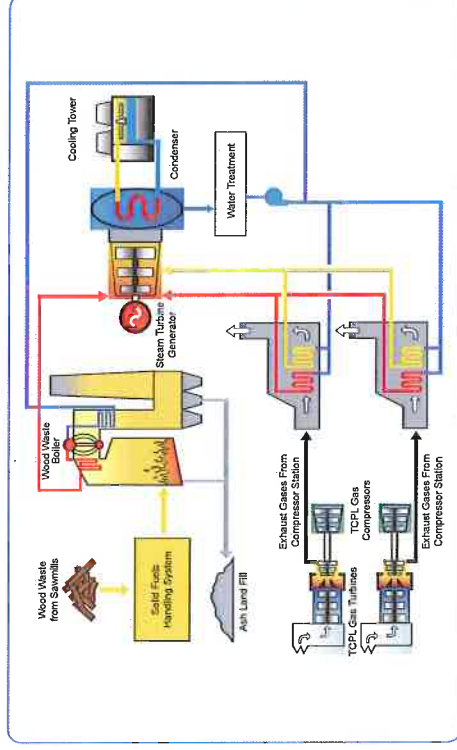
Wind farm near Pincher Creek Alberta

Wind



Co-generation facility in Kimberley

Biogas



Planning reserve margin (PRM)

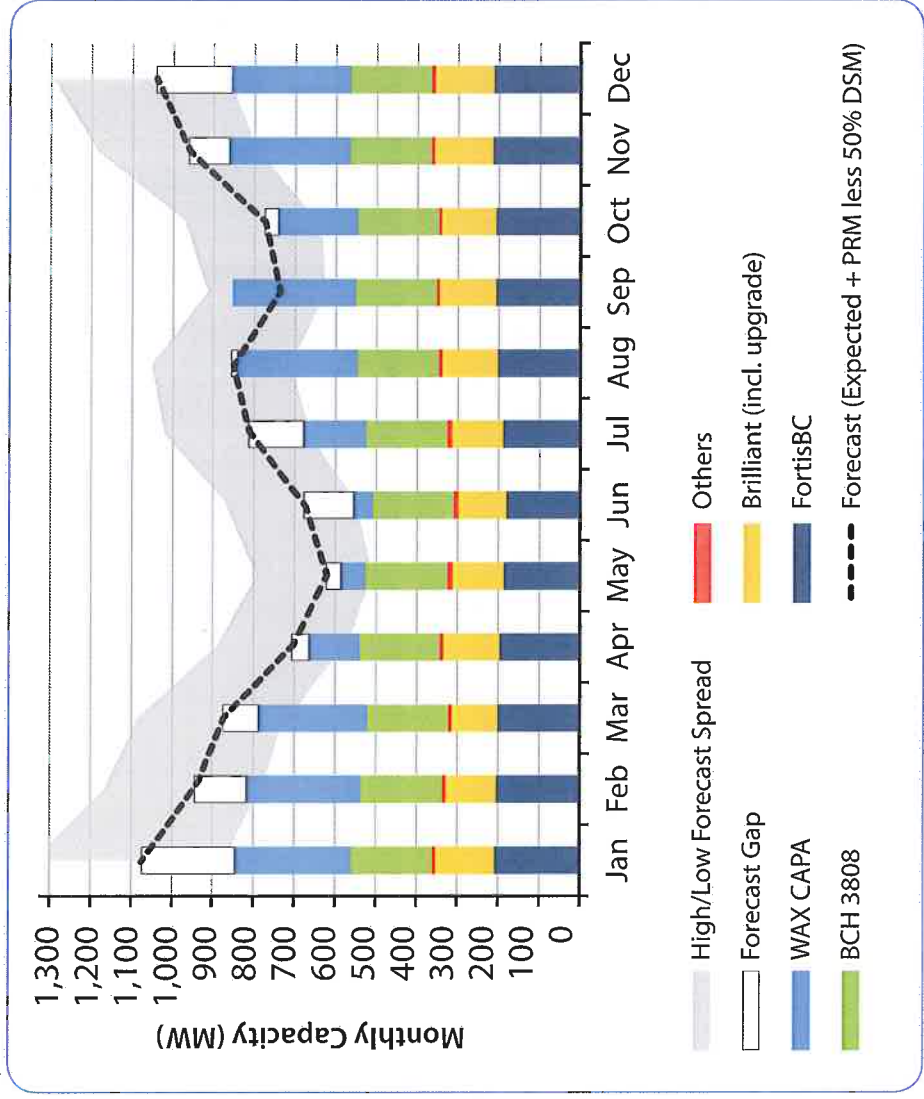
A planning reserve margin is:

- The power supply insurance that allows a utility to reliably serve customers

Three primary drivers for PRM:

- Unavailability of supply due to unplanned generating unit or transmission outages
- Unexpectedly high loads, typically due to extended extreme weather events
- A period of load growth that outpaces the possible installation of new power supply resources

2040 monthly capacity with expected load



Capital projects

Sustaining capital:

- Shift from a period of capital investment in new infrastructure to period of sustaining capital
- Shift from greenfield construction to brownfield construction
- Focus on continuing reliability through maintaining and upgrading current infrastructure
- Current projects and programs create a balance between rates and reliability
- Continue to provide safe and reliable service at the lowest reasonable costs



Proposed Kootenay and Boundary region projects

Station Improvements:

- **Beaver Park substation (Trail)**
 - Upgrade and expand existing Beaver Park substation to accommodate larger transformer
 - Convert transmission system in Montrose and Fruitvale to 25kV
 - Remove and salvage Fruitvale and Hearns substations
 - Project solves capacity issues, removes two stations, removes old equipment
- **Grand Forks terminal station**
 - Upgrade station by adding terminal transformer
 - Remove and salvage transmission lines (9 and 10 Lines) between Christina Lake and Rossland
 - Adding station offsets costs otherwise required to maintain 9 and 10 Lines
 - Provides continued reliability for area customers



Proposed Okanagan region projects

Station improvements:

- **DG Bell terminal station (Kelowna)**
 - Addition of Static VAR Compensator (SVC) which will support the voltage of Kelowna's transmission system needed by 2015 – 2017
- **Lee terminal station (Kelowna)**
 - Addition of a third terminal transformer to maintain reliable service to the Kelowna area as the load continues to grow – needed by 2015
 - Addition of distribution transformer possibly needed by 2018

Transmission improvements:

- **Ellison to Sexsmith Road transmission**
 - New 138kV transmission line from Ellison substation along Highway 97 to link with existing line at the corner of Highway 97 and Sexsmith Road
 - Completes transmission loop for customers in north Kelowna including airport and University of BC Okanagan
 - Significantly improves reliability in the area



Customer priorities

FortisBC must always balance safety, reliability and cost when undertaking new projects, as well as other considerations important to customers and communities.

These may include:

- Proximity to other buildings and amenities (homes, schools, parks etc.)
- Environmental considerations (natural habitat, wildlife, “no net loss”)
- Aesthetics
- Effects during construction
- Risk of project delay
- Flexibility for future growth

Please share your priorities with us.



Social and environmental consideration fund

Every project in every community is a little bit different.

- Our customers are telling us they want additional project components
- Projects may need:
 - Additional visual screening (vegetation, berming or fencing)
 - Special environmental treatment
 - Other community specific amenities

Would you consider adding project funds for social and environmental considerations? If so, how much is reasonable? 1-3 per cent of project total (\$1000 - \$3000 for every \$100,000)?



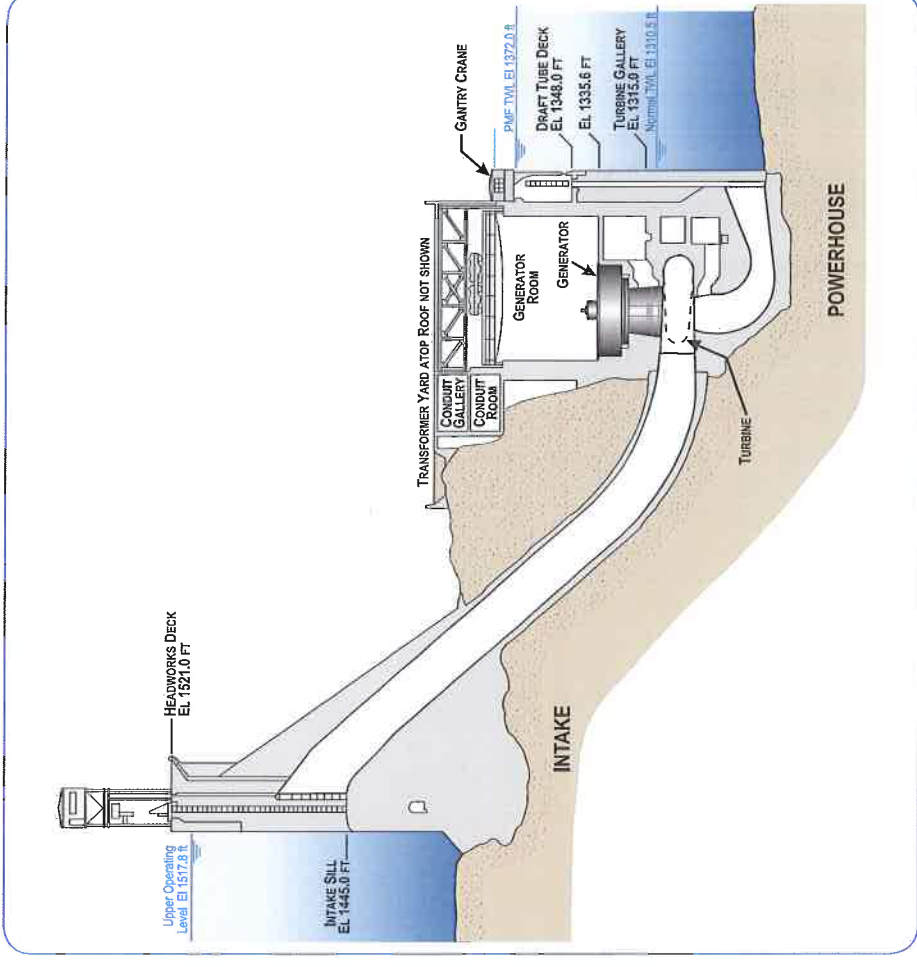
FortisBC generation

Power generation:

- Water flows from the reservoir, down the penstock and then spins a turbine connected to a generator
- The generator converts mechanical energy into electrical energy

Future generation projects:

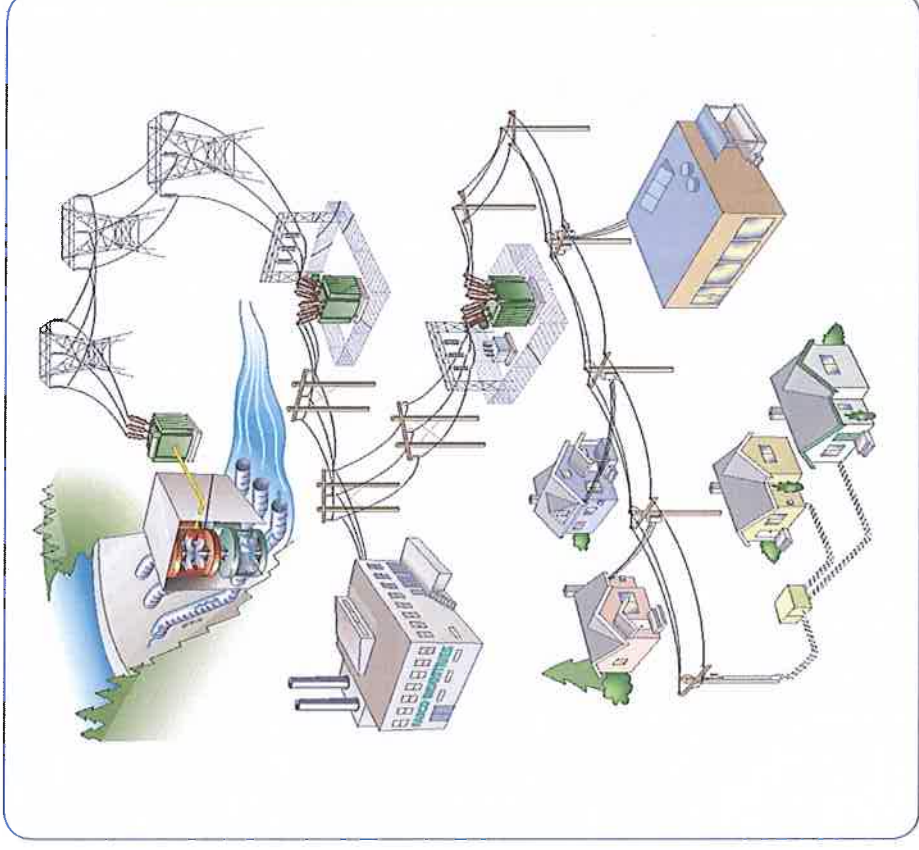
- Moving from period of mechanical and electrical unit upgrades to upgrading the infrastructure required to support generation – like dams, powerhouse structures, spill gates and spill ways
- Work is scheduled based on engineering and condition assessments



FortisBC infrastructure

FortisBC manages over \$1.2 billion in infrastructure including:

- Four generating plants on Kootenay River
- 7,000 km of transmission and distribution lines
- 80 substations (including 13 for third parties)
- 102,000 poles
- 346 fleet vehicles
- 14 office buildings
- Over 670 desktop and laptop computers and 74 servers and storage devices



Managing infrastructure

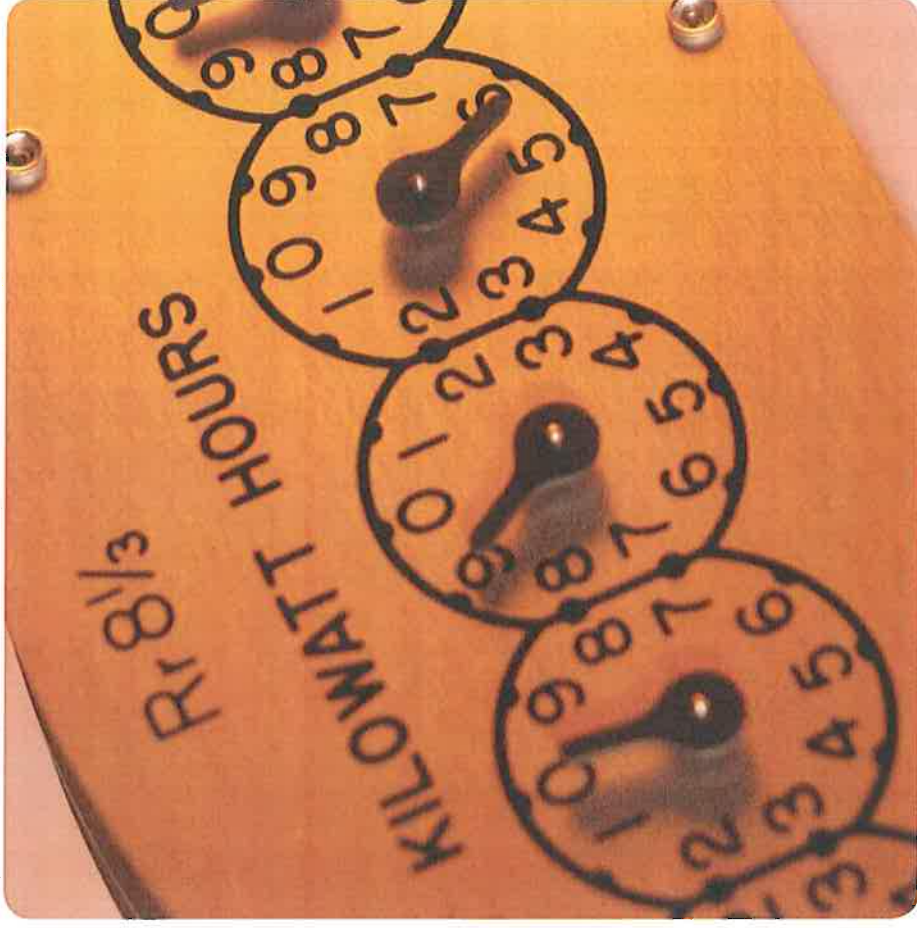
With over \$1.2 billion of infrastructure in the FortisBC system, prudent management of infrastructure is essential.

- Proposes shift from time-based management to condition-based management
- Once new system is in place, this approach ensures maintenance dollars will be used more effectively
 - Critical and high risk equipment monitored and dealt with first



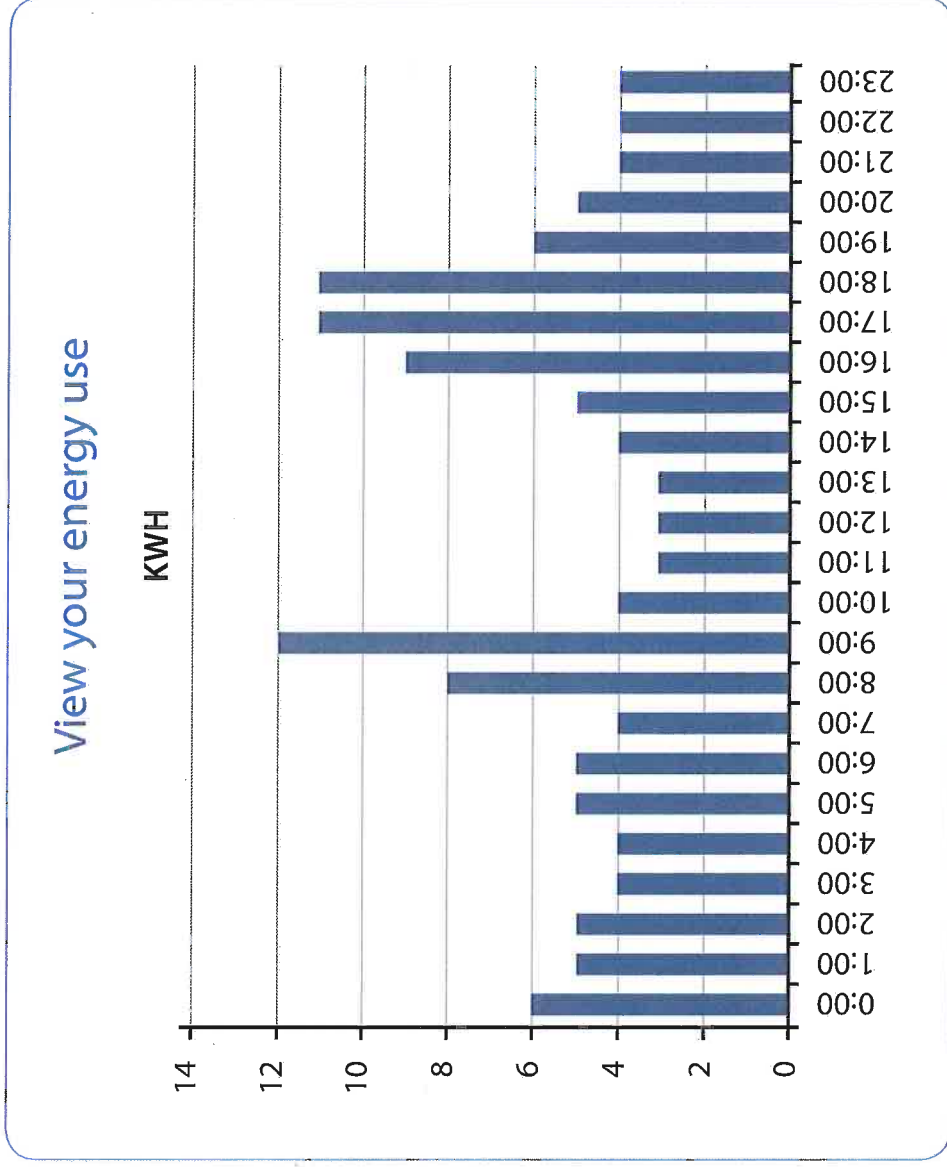
Automated Metering Infrastructure (AMI)

- Sometimes known as “smart meters”
- New meters provide customers with better energy use information
- Provide better information to utility for outage response
- Reduces need for vehicles and employees to read each meter
- No bill estimates



Manage your bill

- AMI provides more information about when and how much energy you use
- Customers can view energy use on an in-home display or on a secure website
- Provides daily, hourly and monthly energy use information



What is DSM?

Demand side management or DSM is the planning and implementation of programs designed to influence energy consumption on the customer's side of the electrical meter by encouraging customers to improve energy efficiency, reduce electricity use, change the time of use, or use a different energy source.

PowerSense is FortisBC's demand side management program. It provides programs and incentives encouraging energy efficiency for FortisBC's 161,000 direct and indirect customers.



PowerSense history

- FortisBC PowerSense is an award-winning program launched in 1989
- Cost-effective resource
- Mechanics:
 - DSM is included in rate base
 - Program must pass an economic test
 - Includes both programs and incentives (rebates)
 - Customer advisory committee
- 380 GWh of energy saved to date – enough to power about 29,700 homes for a year
- Investment of \$42.5 million has resulted in 60 megawatts (MW) of capacity requirements avoided
- 2011 DSM initiatives currently meet 42 per cent of FortisBC's additional electrical needs
 - BC Energy Plan calls for DSM to meet 50 per cent of incremental resource needs by 2020

