

DISCUSSION OF MANITOBA HYDRO'S LOAD FORECAST

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Outline

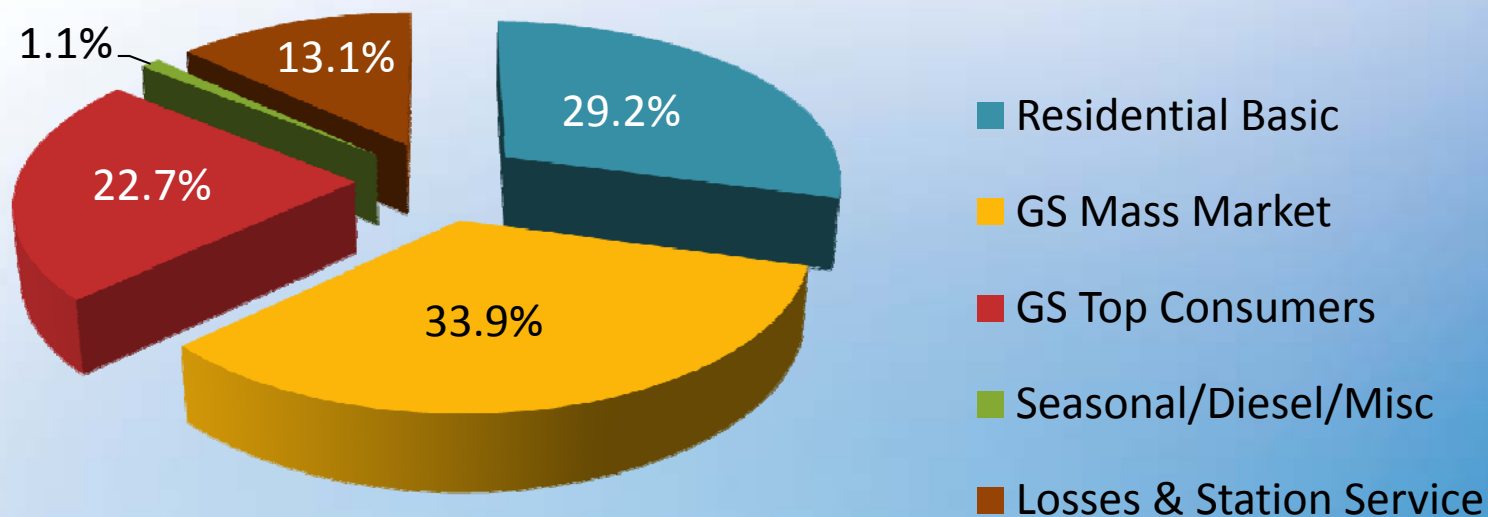
2012 Forecast & Methodology

Variability & Accuracy

2013 Forecast

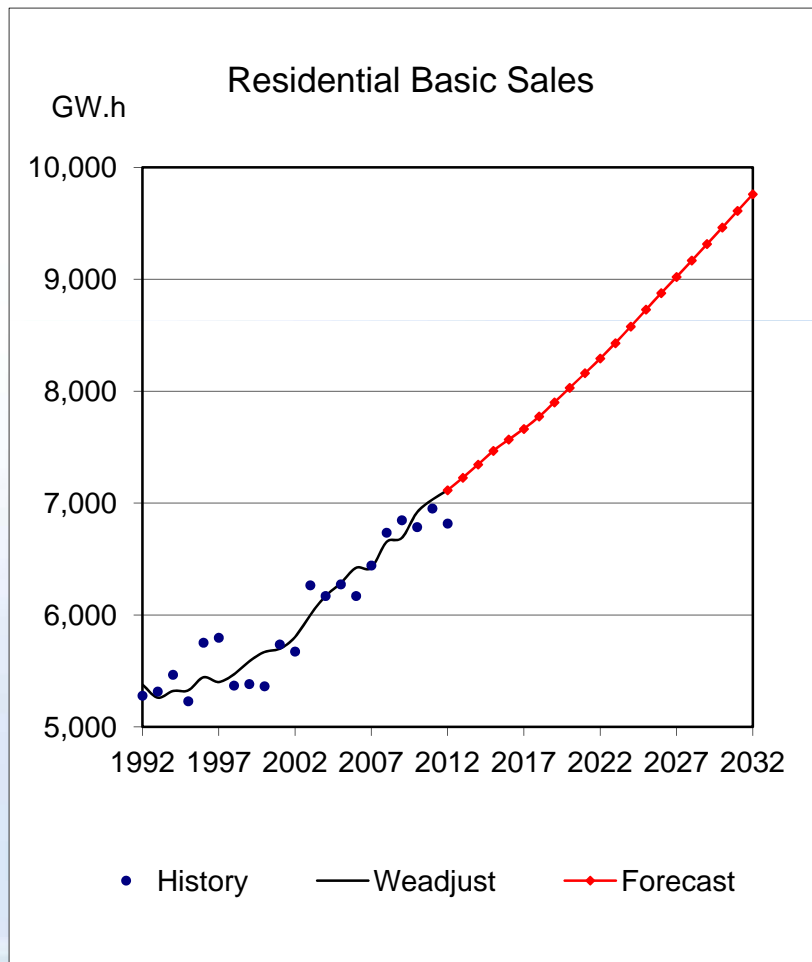
2012 Forecast

2011/12 GROSS FIRM ENERGY



Gross Firm Energy: 24,367 GW.h

2012 Forecast



FINDINGS:

- Load has grown at a rate of 87 GW.h or 1.4% per year over the last 20 years.
- Forecast sector to grow at a rate of 132 GW.h or 1.6% per year over the next 20 years.
- Primary drivers of growth:
 - Population
 - Market share of electric heat

Methodology

APPROACH:

- Based on End-Use Forecast
- Survey and Billing Information inputs to Conditional Demand Analysis provides average usage per appliance
- Customers, saturations and average usage combined in Residential End Use Model

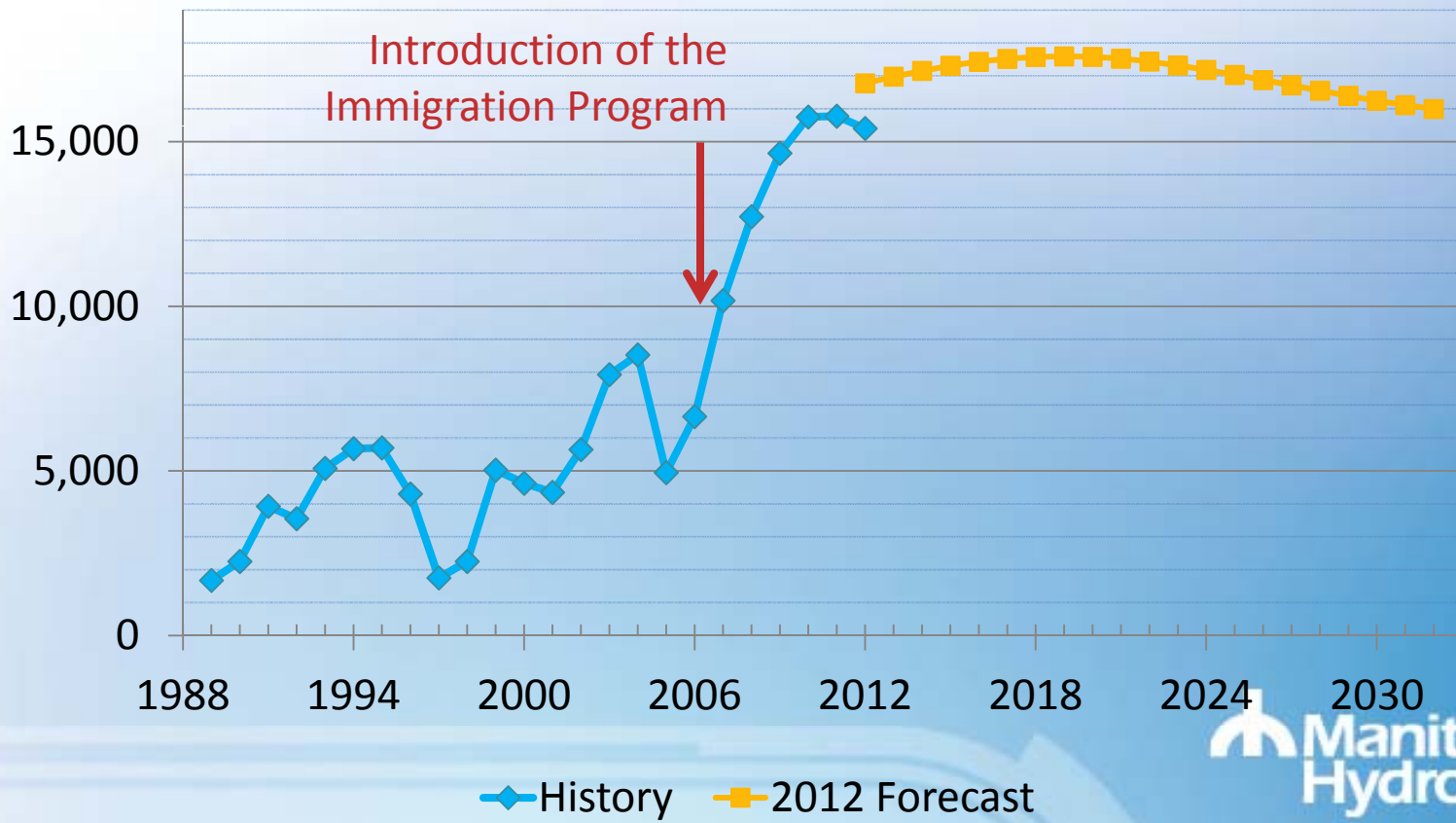
KEY DATA:

- Economic Outlook
 - Customer Forecast
 - Energy Price Forecasts (elec. and natural gas)
- Customer information database
- Residential Survey

What's driving growth

MANITOBA POPULATION ANNUAL GROWTH

RESIDENTIAL



What's driving growth

ELECTRIC SPACE HEAT

Single Detached Homes

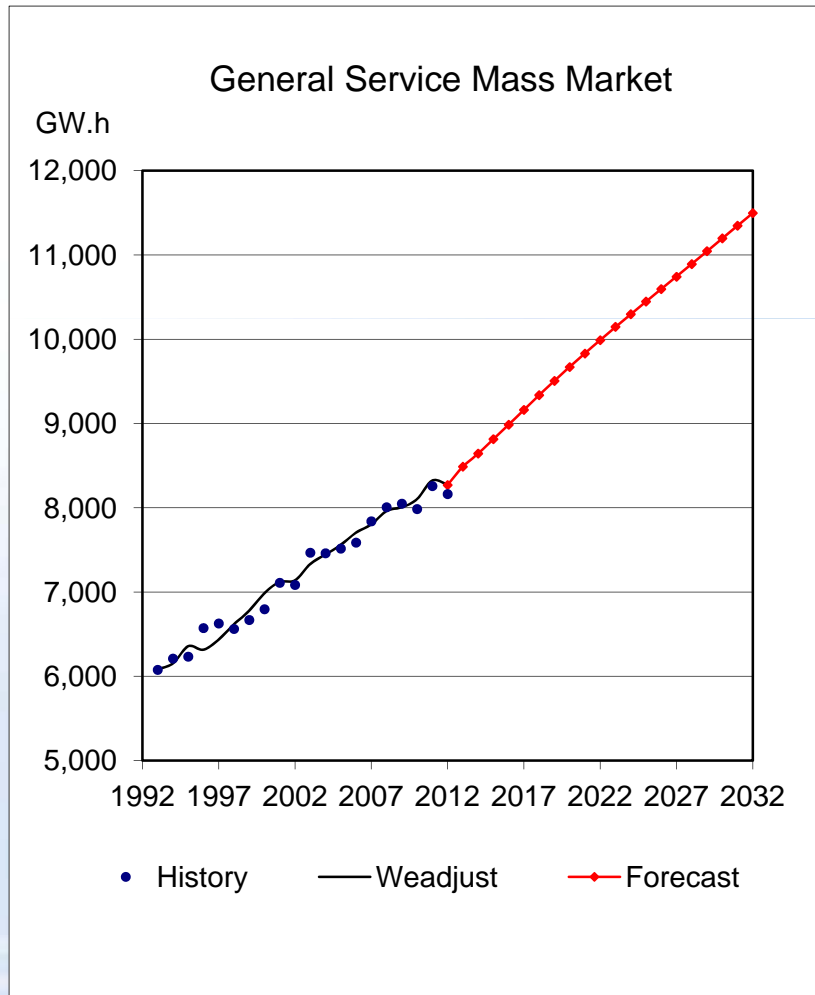
Area	All Homes	Built 2000-2004	Built 2005-2009
Winnipeg	4%	4%	3%
South Gas Available	46%	45%	63%
Gas Unavailable	90%	95%	100%
Overall	36%	42%	56%

ELECTRIC WATER HEAT

Single Detached Homes

Area	All Homes	Built 2000-2004	Built 2005-2009
Winnipeg	24%	74%	100%
South Gas Available	63%	62%	100%
Gas Unavailable	97%	93%	100%
Overall	52%	73%	100%

2012 Forecast



FINDINGS:

- Load has grown at a rate of 115 GW.h or 1.6% per year over the last 20 years.
- Forecast sector to grow at a rate of 161 GW.h or 1.7% per year over the next 20 years.
- Primary drivers for growth:
 - Population
 - GDP

Methodology

APPROACH:

- Customer Growth based upon an econometric model

$$\% \text{ change in customers} = f(\text{CGDP, CRES})$$

- Customer growth forecast, saturations and average usage for 4 GS Rate categories are combined

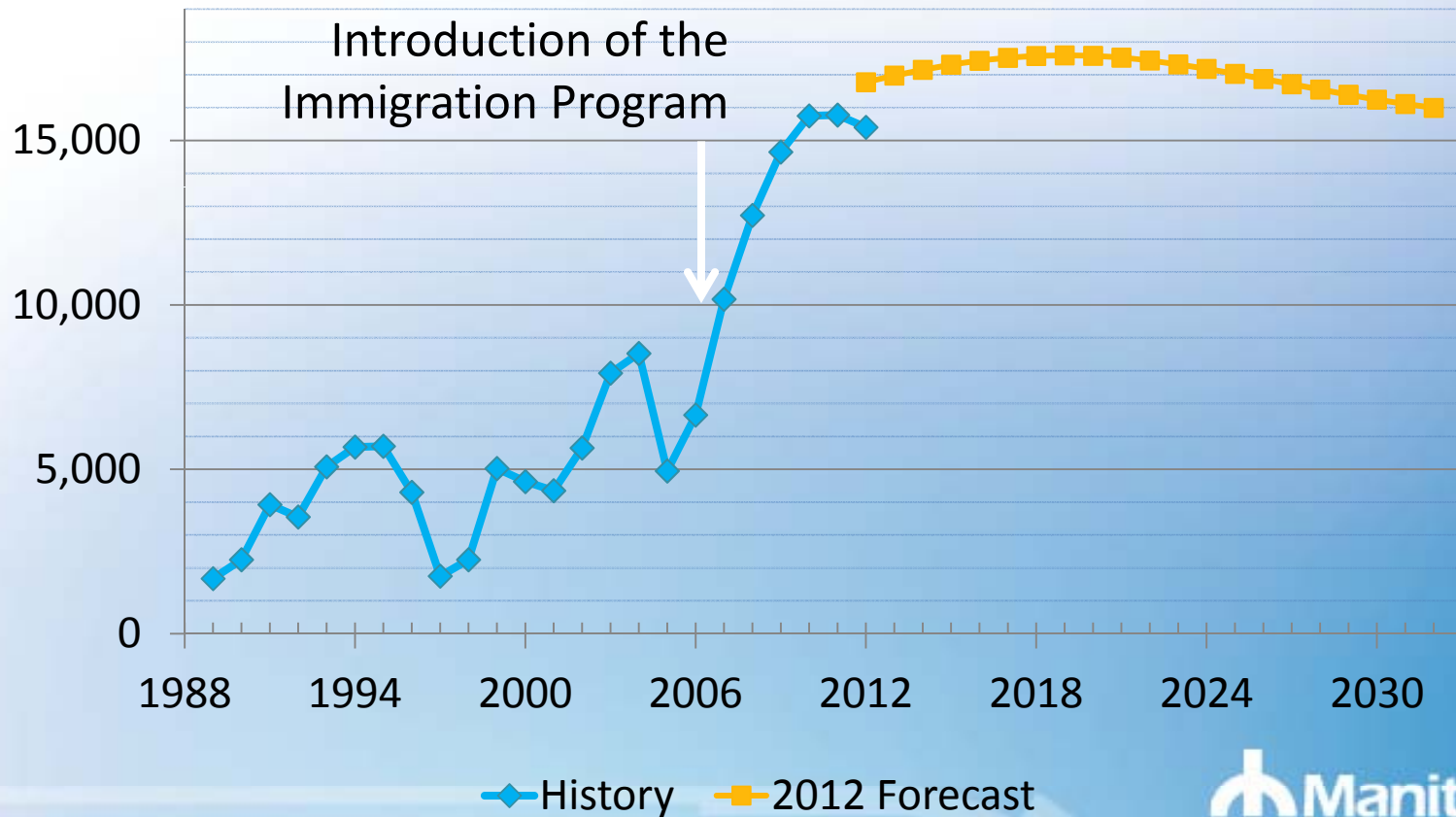
KEY DATA:

- Economic Outlook
 - Number of Residential Customers
 - Manitoba GDP
- 5 year weather-adjusted average use for each of the 4 GS Rate categories.

What's driving growth

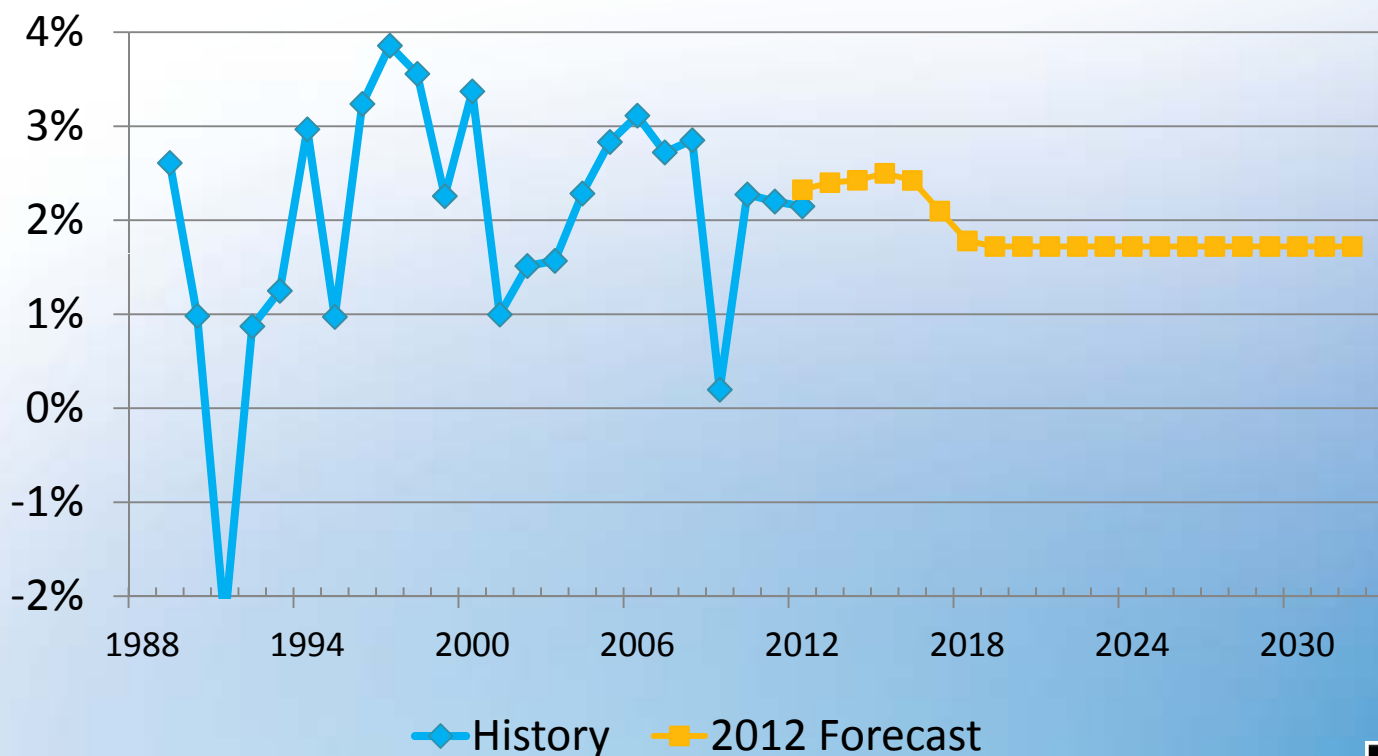
GS MASS MARKET

MANITOBA POPULATION: ANNUAL GROWTH



What's driving growth

MANITOBA REAL GDP



Solid growth expected through the forecast
 All things considered, our scenario for Manitoba's economy is one of steady solid growth with real GDP rising 2.7% in 2013, thus matching the estimated increase in 2012, and 2.8% in 2014.



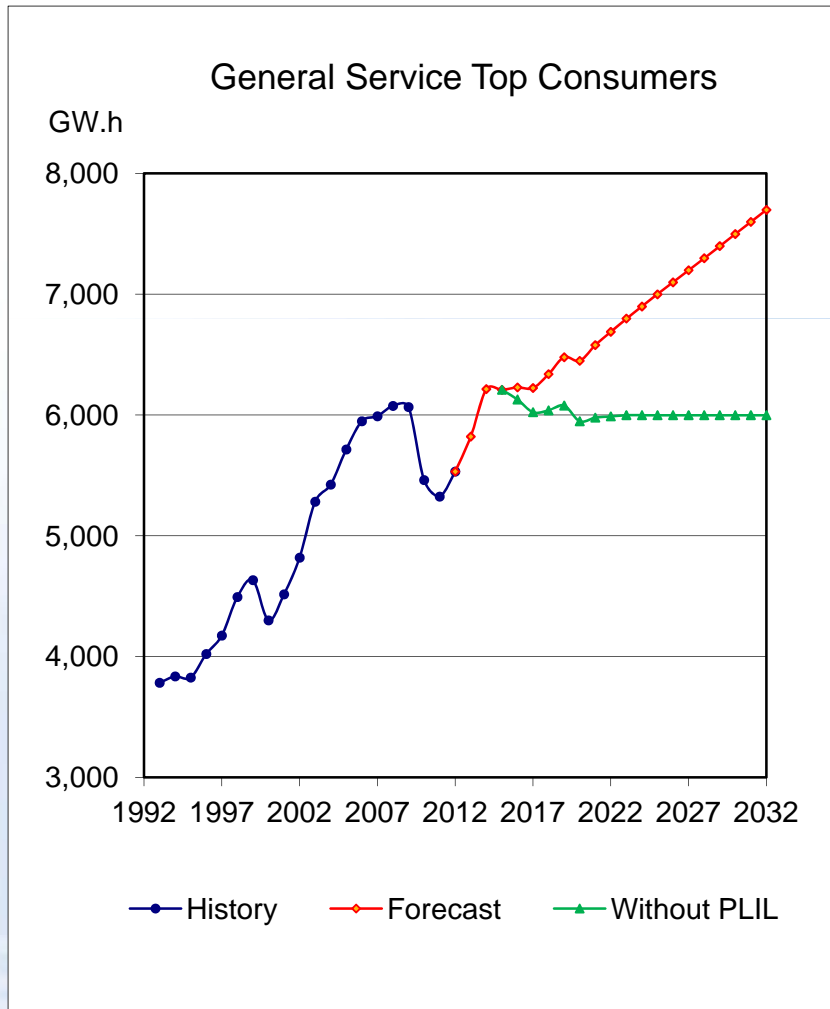
What's driving growth

Year	Customers	Weather Adjusted GW.h	Average Use kW.h/cust	Change in Customers	Change in GW.h	Average Use / Change
1991/92	57,403	6,096	106,191			
1996/97	58,093	6,441	110,873	689	345	500,724
2001/02	60,086	7,144	118,898	1,993	703	352,789
2006/07	63,596	7,808	122,779	3,510	664	189,205
2011/12	65,546	8,279	126,308	1,950	471	241,427



(New customers consume more than existing customers)

2012 Forecast



FINDINGS:

- Overall sector grew by 1800 GW.h over the last 20 years, by 200 GW.h over last 10 years.
- Forecast sector to grow at a rate of 108 GW.h or 1.7% per year over the next 20 years.

Methodology

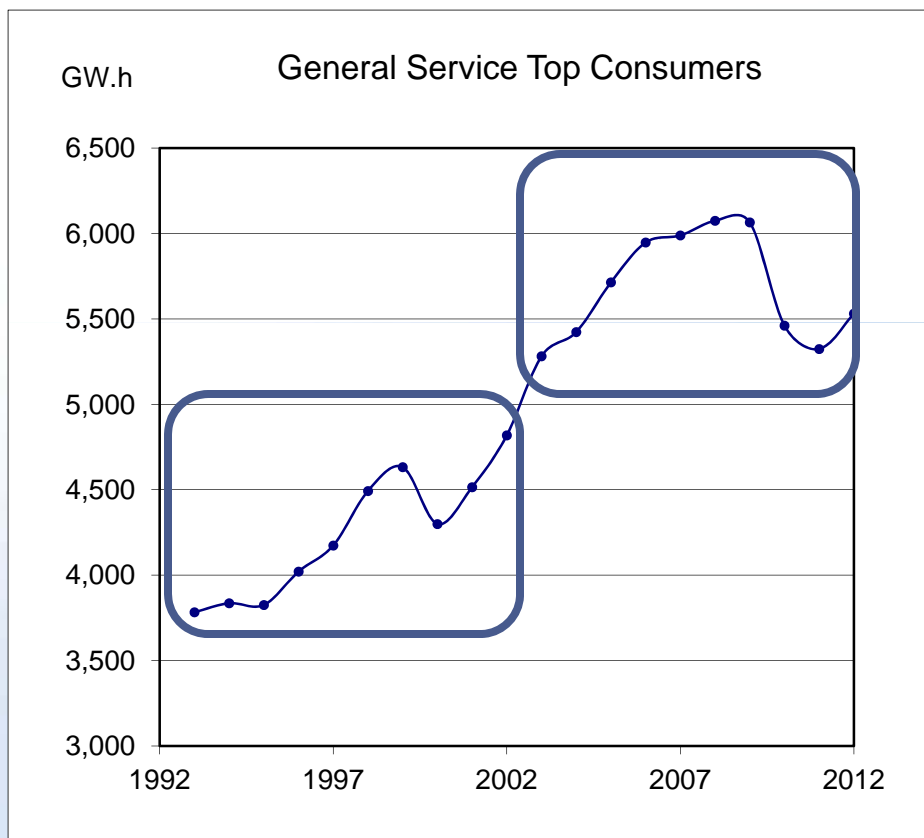
APPROACH:

- Short term individual customer forecasts
- Long term combined forecast
- Potential Large Industrial Load (PLIL) forecast

KEY DATA:

- Historical electricity use
- Short term individual company committed plans and projects.

Methodology



KEY DATA IN PLIL:

Company expansions

Cutbacks and shutdowns

New startups of 100
GW.h/yr or more

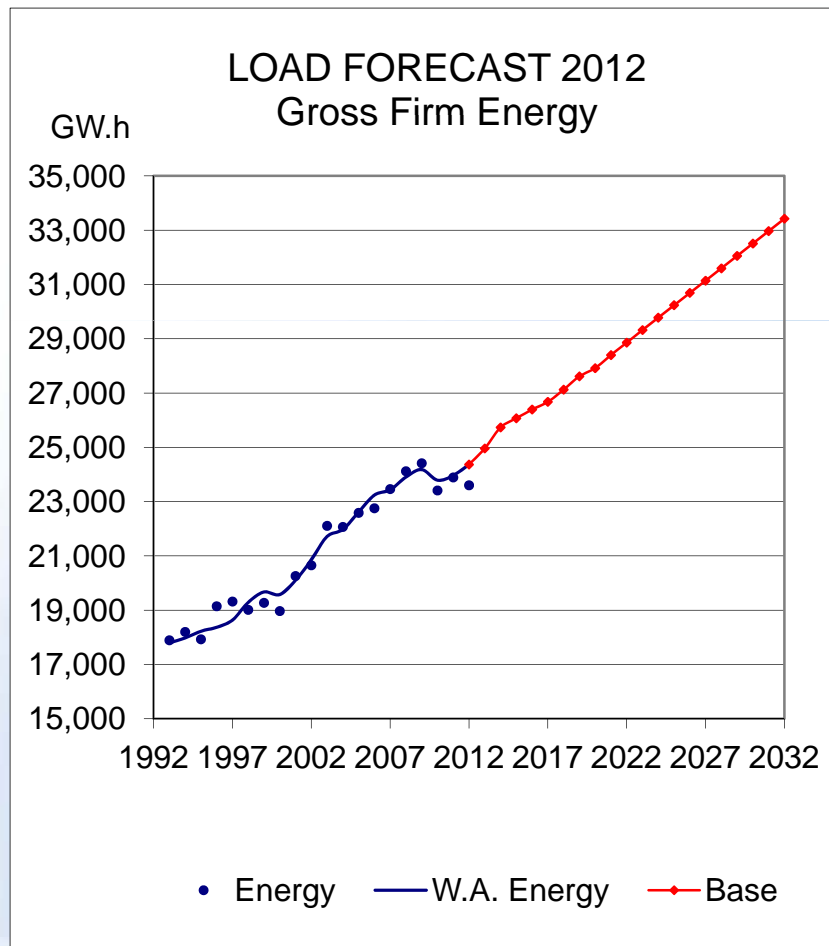
Represents load not individually
forecast under past forecasts.



Methodology

FORECAST PLIL	100	GW.h
Historic Net LOAD GAINS (Last 20 yrs)	85	GW.h
Normal Company Growth	7	GW.h
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HISTORIC TOTAL	92	GW.h

2012 Forecast

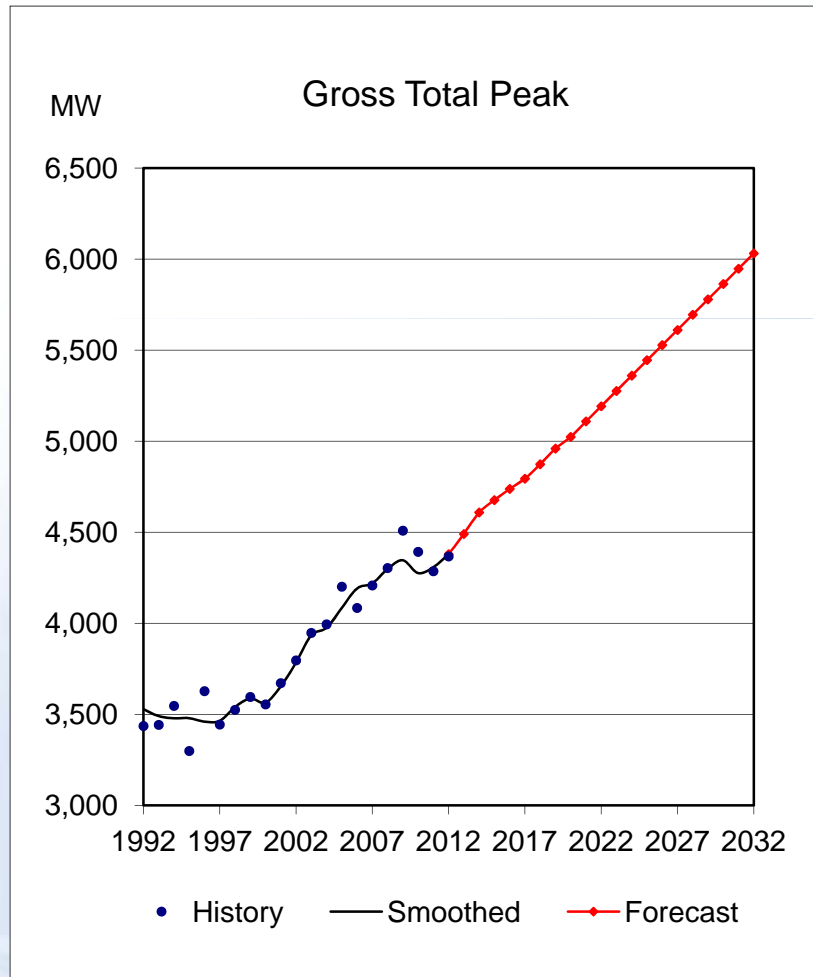


FINDINGS:

- Gross Firm Energy has grown by 329 GW.h or 1.7% per year over last 20 years.
- Forecast to grow at a rate of 453 GW.h or 1.6% per year over the next 20 years.

2012 Forecast

GROSS TOTAL PEAK

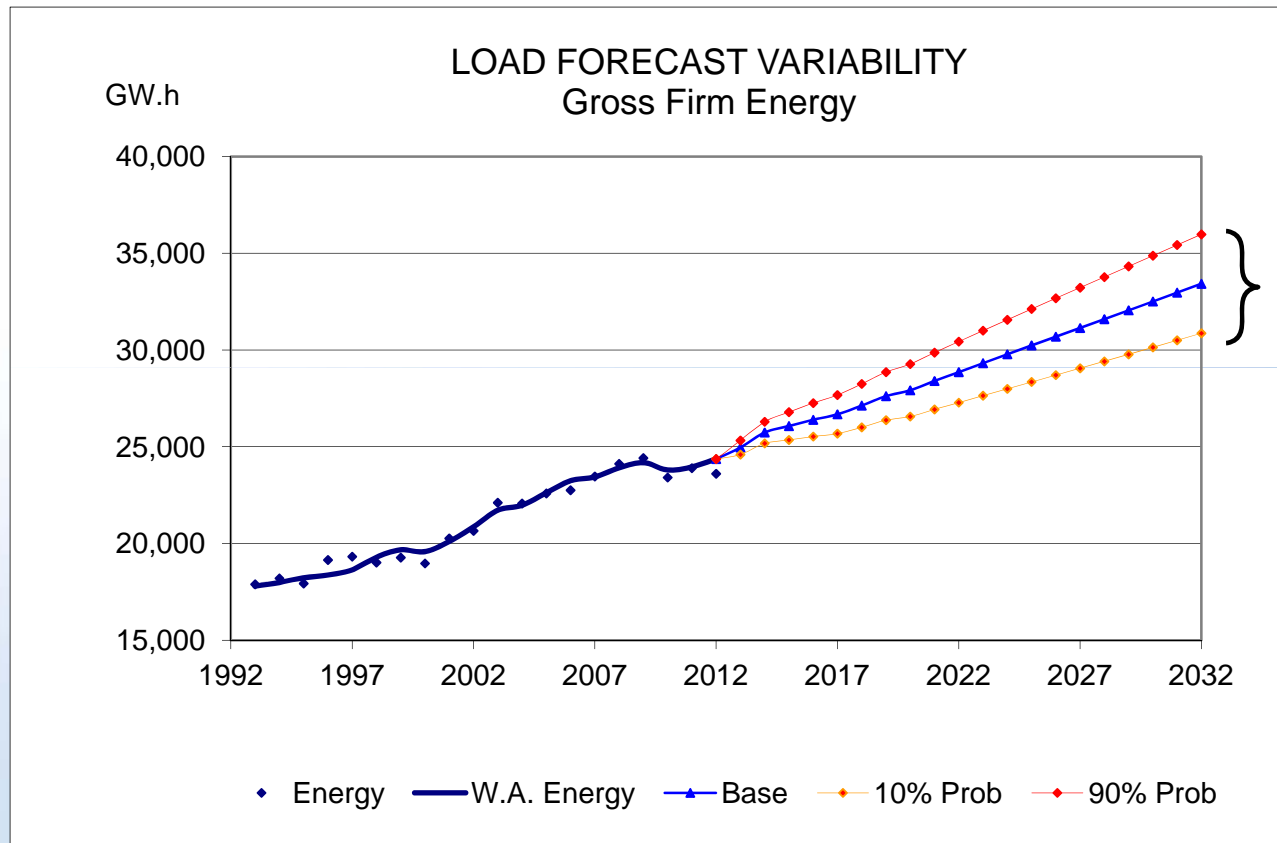


FINDINGS:

- Gross Total Peak has grown by 44 MW or 1.2% per year over last 20 years.
- Forecast to grow at a rate of 83 MW or 1.6% per year over the next 20 years.

Recognizing Variability

VARIABILITY

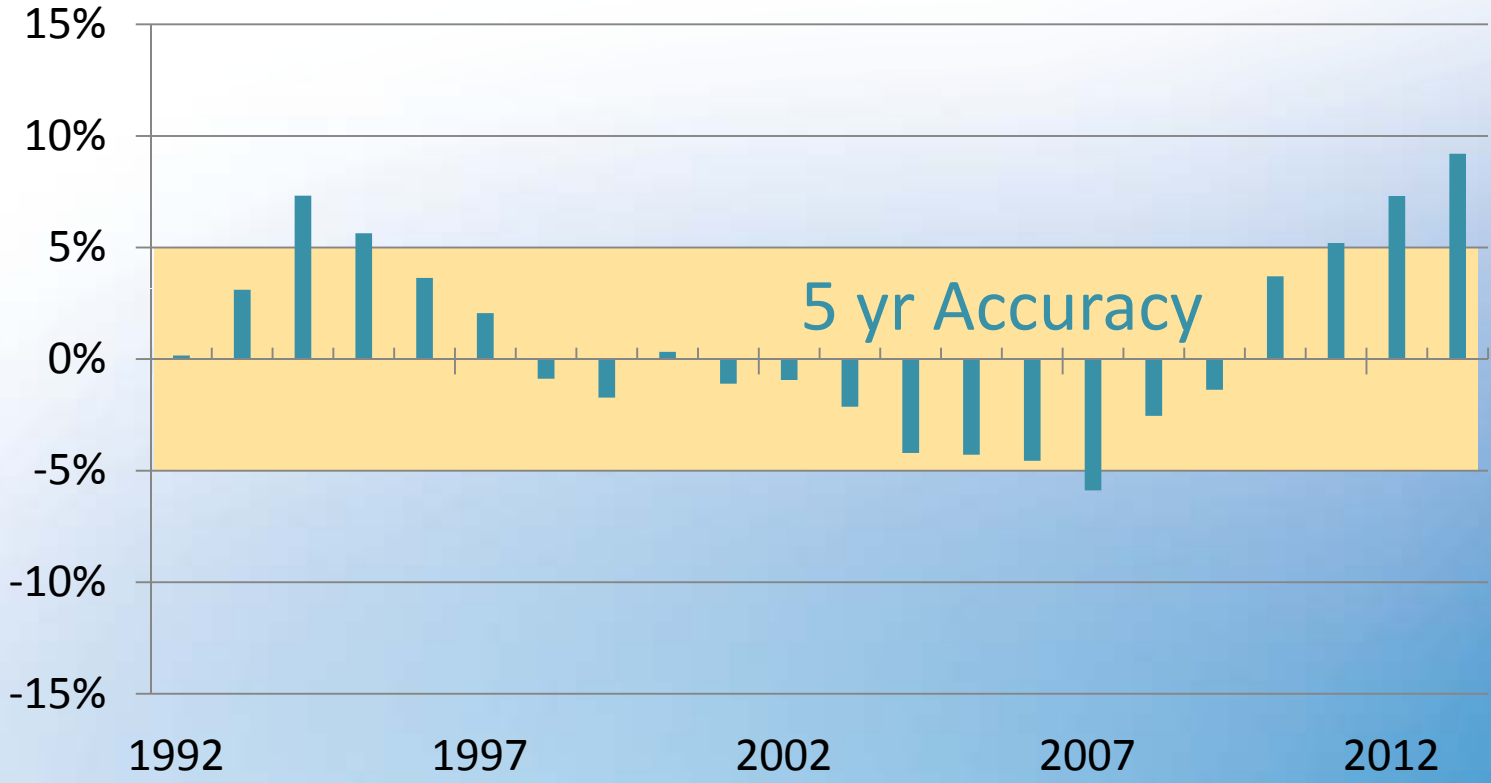


+/-
2,471 GW.h

One New Very Large Industrial Customer = 1,500 GW.h

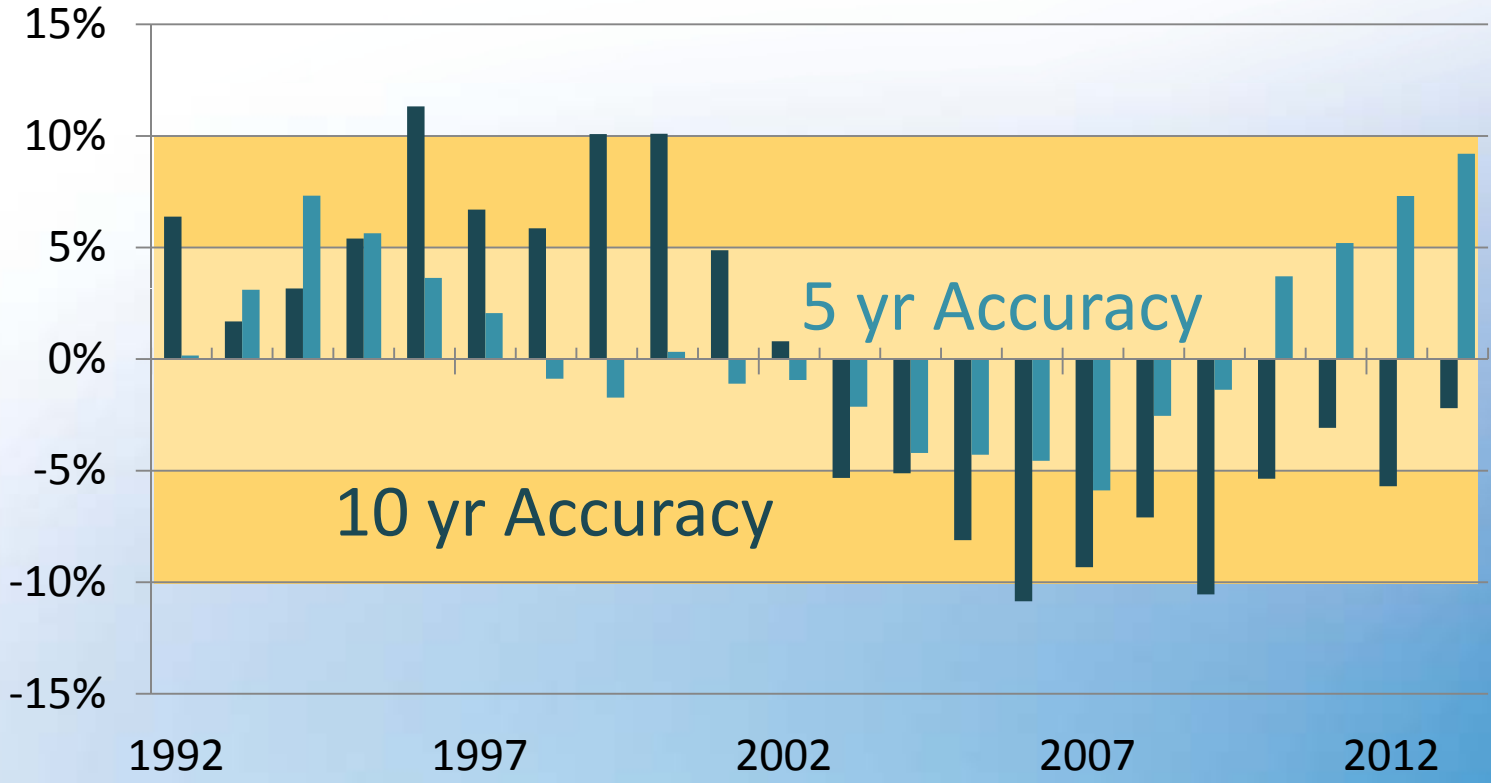
Forecast Accuracy

VARIABILITY

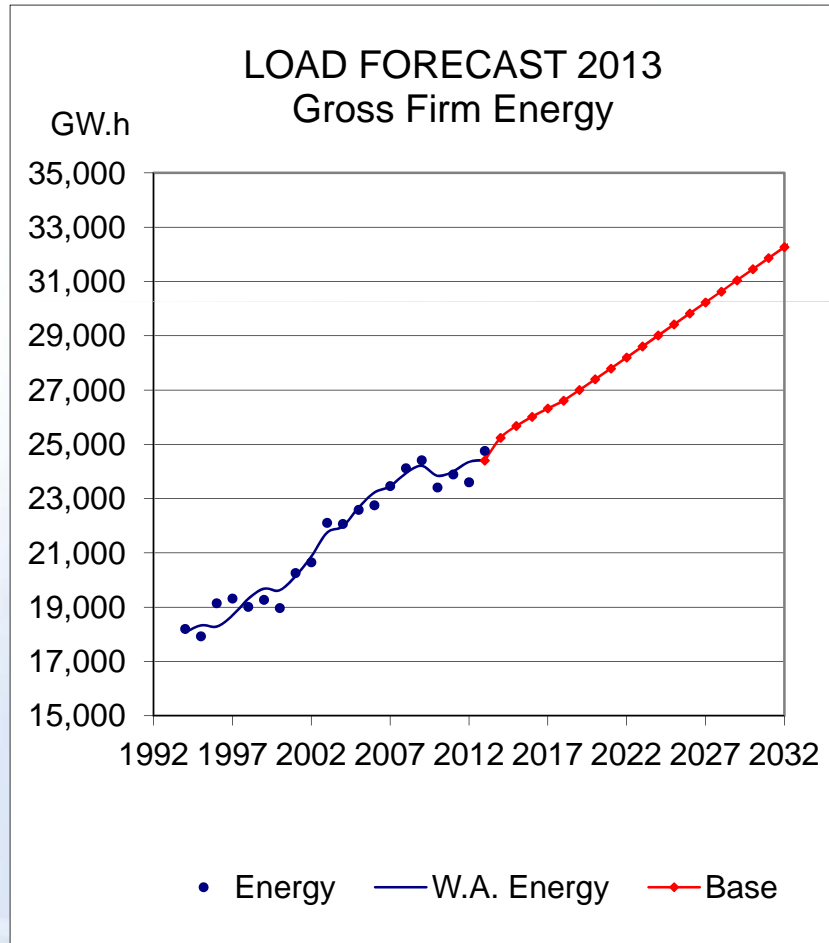


Forecast Accuracy

VARIABILITY



2013 Forecast

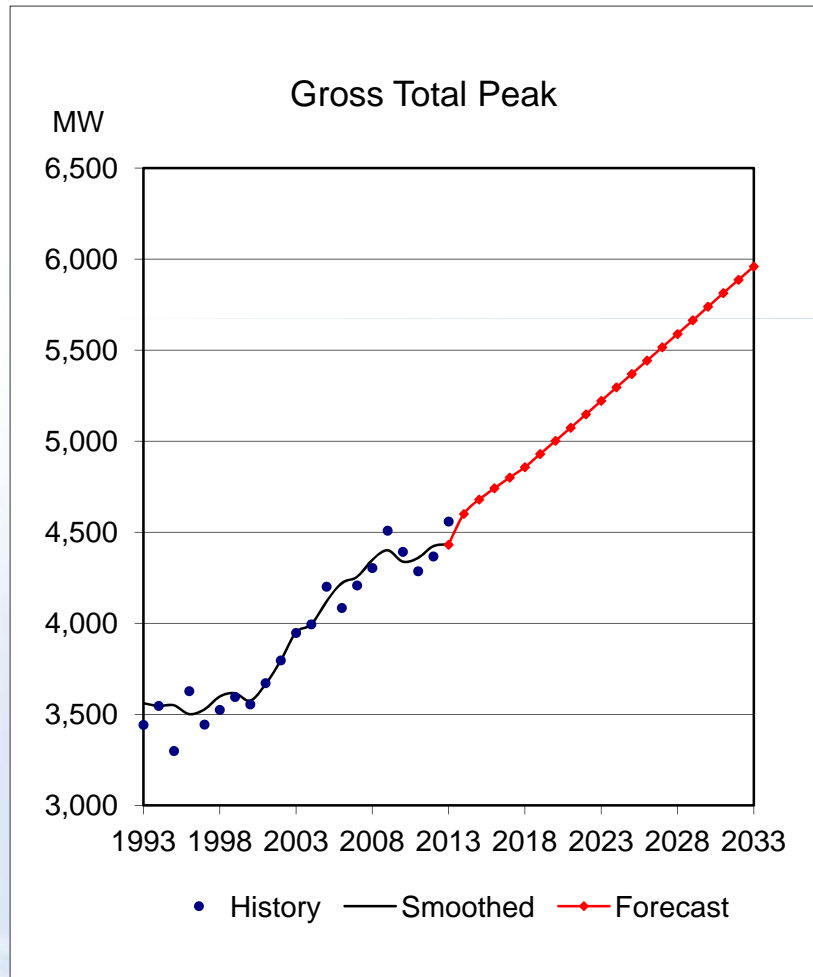


FINDINGS:

- Gross Firm Energy has grown by 334 GW.h or 1.6% per year over last 20 years.
- Forecast to grow at a rate of 413 GW.h or 1.5% per year over the next 20 years.

2013 Forecast

GROSS TOTAL PEAK

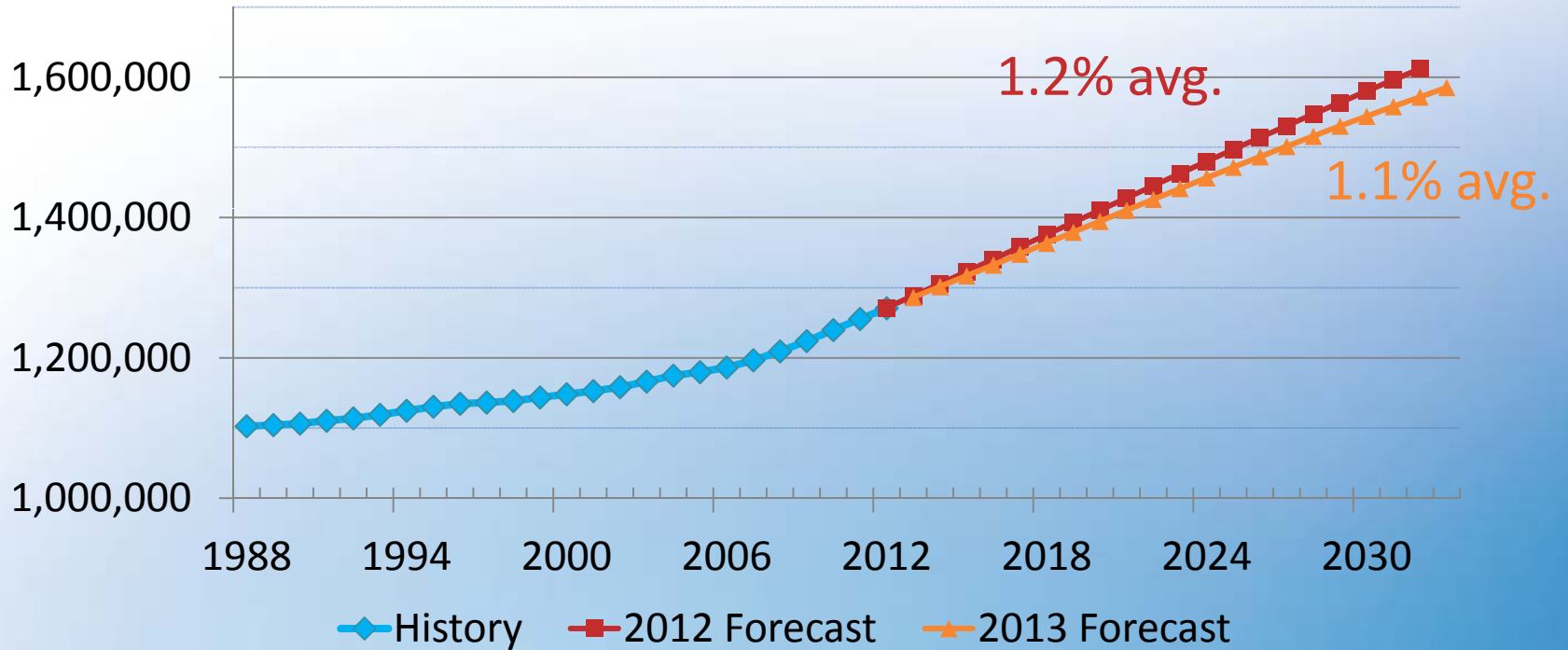


FINDINGS:

- Gross Total Peak has grown by 44 MW or 1.2% per year over last 20 years.
- Forecast to grow at a rate of 76 GW.h or 1.5% per year over the next 20 years.

Main Changes to 2013 Forecast

MANITOBA POPULATION



Impact Over 20 years: Residential Basic: -282 GW.h
GS Mass Market: -191 GW.h



Main Changes to 2013 Forecast

Heating fuel choice initiatives

ELECTRIC SPACE HEATING SATURATION



Main Changes to 2013 Forecast

Heating fuel choice initiatives

ELECTRIC WATER HEATING SATURATION



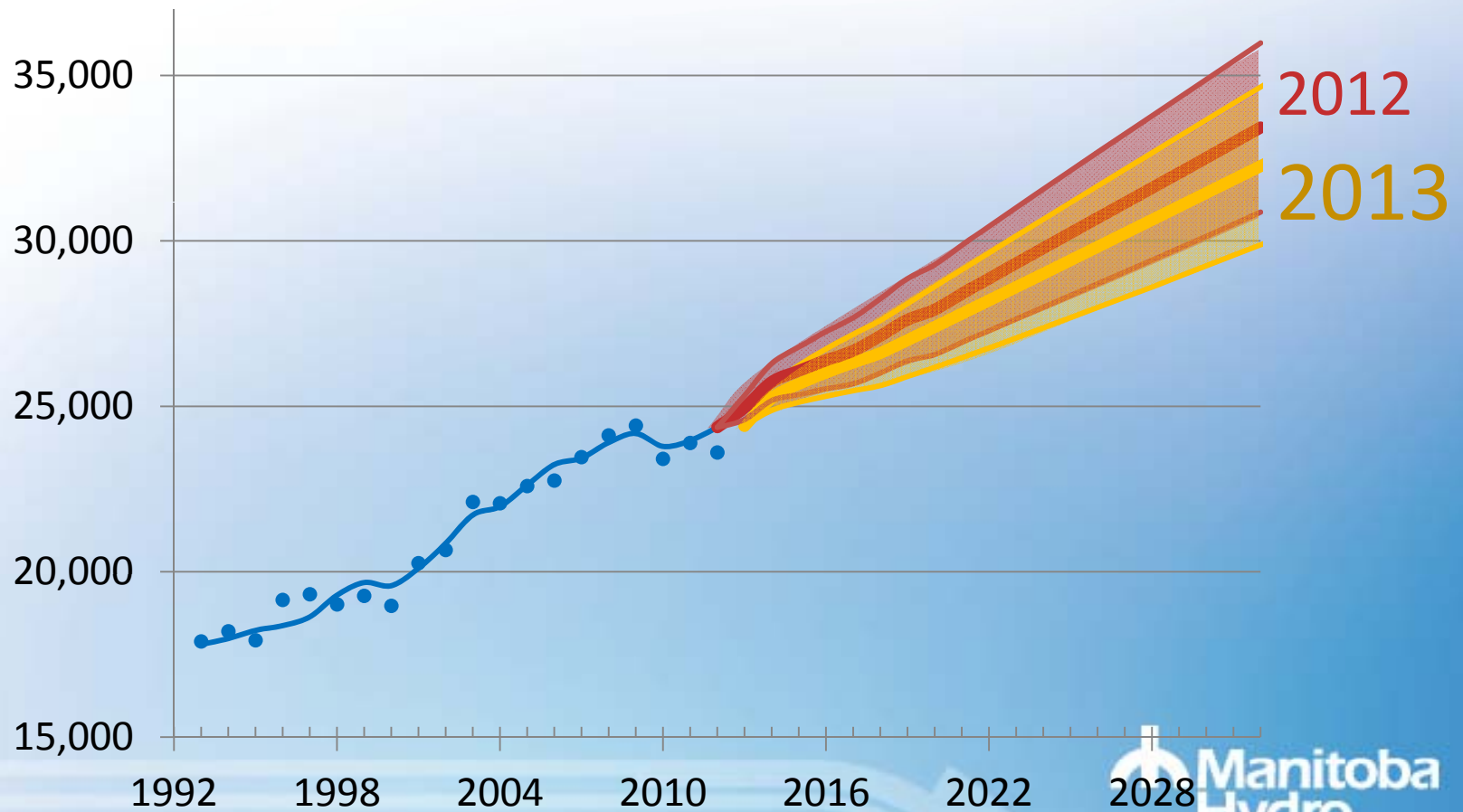
Main Changes to 2013 Forecast

	2012 Forecast	2013 Forecast	Change
Energy Forecast – 2022/23 (GW.h)	29,322	28,605	(717)
Demand Forecast – 2022/23 (MW)	5,276	5,222	(54)
Energy Forecast – 2031/32 (GW.h)	33,425	32,265	(1,159)
Demand Forecast – 2031/32 (MW)	6,032	5,886	(146)
10 year Annual Growth Rate (GW.h/year)	450	420	(30)
10 year Annual Growth Rate (%)	1.7%	1.6%	(0.1)

2013 FORECAST

2012 vs. 2013 Forecast

GROSS FIRM ENERGY



Forecast

- Forecast updated annually to reflect most current available market data.
- Forecast models/methods adjusted whenever appropriate to make improvements.
- Forecasting accuracy over the long term demonstrates methodologies are reasonable and reliable.

