



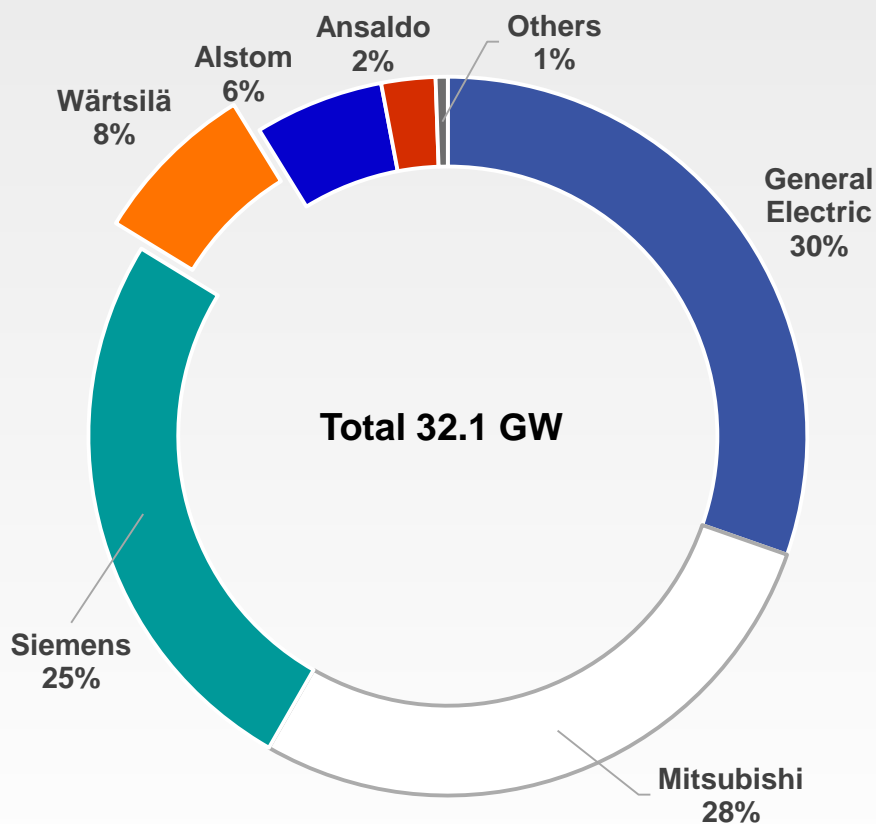
# WÄRTSILÄ

*Value of flexible power generation  
NorthWestern Energy*

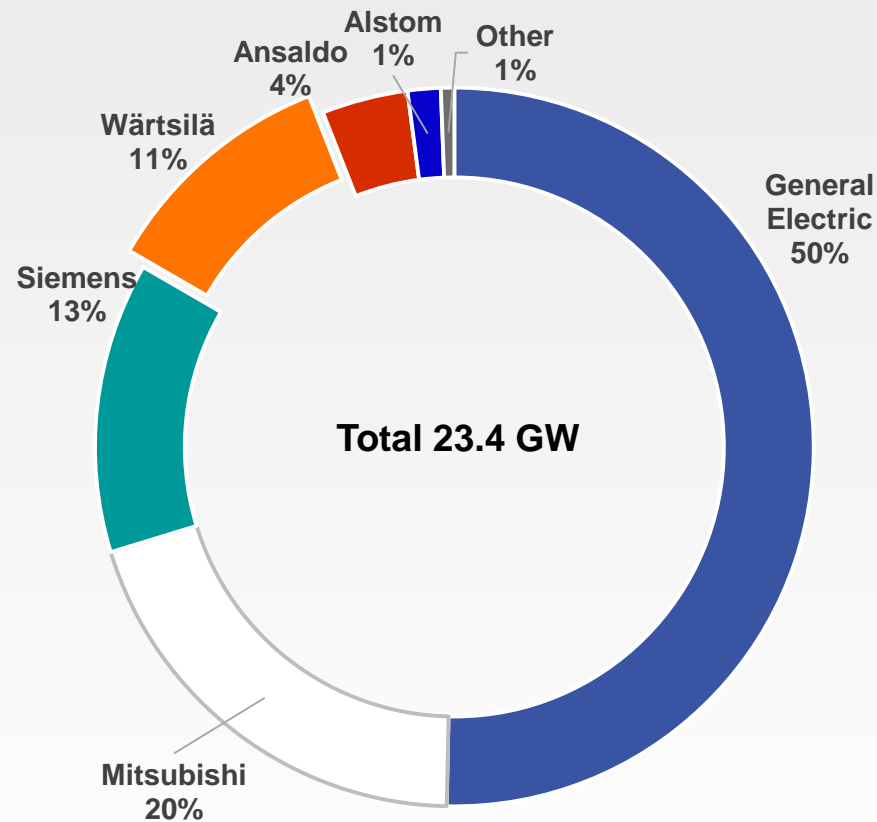
- 
- **Founded in 1834**
  - **Corporate Headquarters in Helsinki, Finland**
  - **US Headquarters in Houston, TX**
  - **~ 18,700 people worldwide**
  - **> \$5 billion in net sales**
  - **> 58 GW installed**
  - **4758 Plants**
  - **10866 Engines**
  - **176 Countries**

# Market share, <500 MW market

## 2013 <500MW market



## 2014 <500MW market



<500MW market down -27% y-o-y.

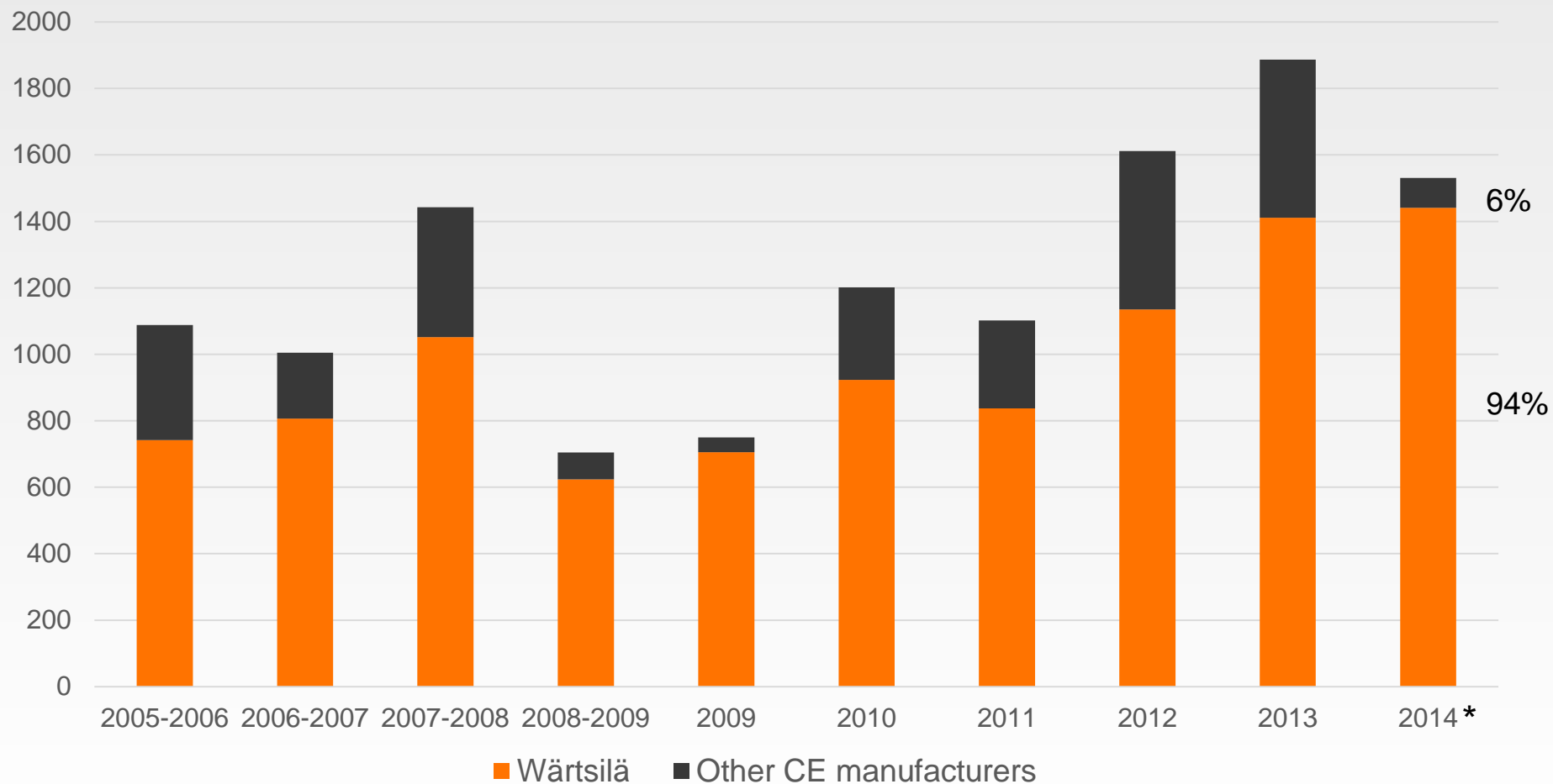
Source: McCoy Power Report

Includes GT-based gas and liquid-fuelled power plants with prime movers above 5 MW

Includes estimated output of steam turbines for combined cycles (factor 0.5 for industrial turbines, 0.33 for aeros)

Oil & Gas projects not included. Other combustion engines not included – data not available

# Market Share MW, Gas, units >5 MW



# Wärtsilä - USA Plant References

## Washington- 39 MW

Boulder Park (Avista) 32 MW  
Olympic View (MCPUD3) 7 MW

## Oregon- 236 MW

Port Westward 2 (PGE), 220 MW\*  
Wah Chang 16 MW

## California- 270 MW

Modesto (MID) 50 MW  
Humboldt (PG&E) 163 MW  
Red Bluff (S&S) 57 MW

## Nevada -118 MW

Barrick Gold Western 102 (BG)

## Colorado-229 MW

Plains End I (EIF) 113 MW  
Plains End II (EIF) 116 MW

## New Mexico – 54 MW

ARPA (City of Raton) 7 MW  
LCEC 47 MW

## Hawaii - 32 MW

Kauai Utility 32 MW

## HECO – 50 MW

## Kansas- 143 MW

Midwest Energy 76 MW

## Midwest Energy 28 MW

City of Iola 11 MW

## Coffeyville 56 MW

## Texas- 629 MW

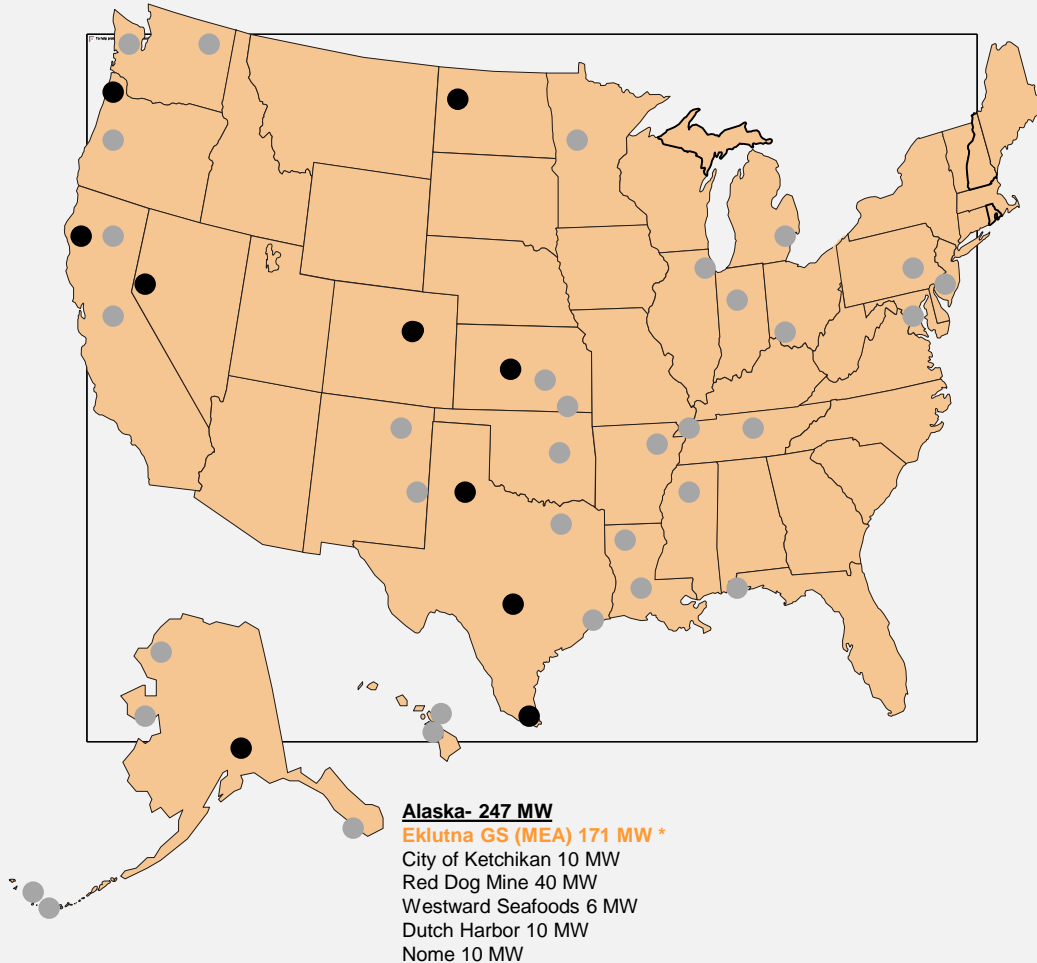
Antelope (Golden Spread) 170 MW  
Greenville (GEUS) 25 MW  
Pearsall (STEC) 203 MW  
Red Gate (STEC) 225 MW \*  
Moss Bluff 8,000 Hp – 6 MW Compression

## Oklahoma - 56 MW

## Stillwater – 56 MW

## North Dakota - 112 MW

## Williston – 112 MW



## Alaska- 247 MW

## Eklutna GS (MEA) 171 MW \*

City of Ketchikan 10 MW  
Red Dog Mine 40 MW  
Westward Seafoods 6 MW  
Dutch Harbor 10 MW  
Nome 10 MW

## Minnesota-23 MW

Northern States Power, 14MW  
Hutchinson, 9 MW

## Michigan- 17 MW

Detroit Airport

## Illinois-25 MW

University of Illinois

## Indiana-8 MW

City of Rensselaer

## Ohio-11 MW

Miami University, Oxford

## Pennsylvania-23 MW

Borough of Chambersburg

## New Jersey -9 MW

Mannington

## Maryland-31 MW

Sweetheart Cup 11 MW  
BG&E 14 MW  
Calvert Cliffs (BGE) 6 MW

## Missouri-12 MW

City of Kennett

## Tennessee-12 MW

El Paso 16,000 Hp  
Compression

## Arkansas-18 MW

City of Paragould

## Alabama-41 MW

Mobile Bay

## Mississippi-12 MW

El Paso 16,000 Hp  
Compression

## Louisiana-77 MW

## City of Alexandria 65 MW\*

El Paso 16,000 Hp  
Compression

**+2,600 MW Total Capacity**



# Value of Fast and Flexible Generation

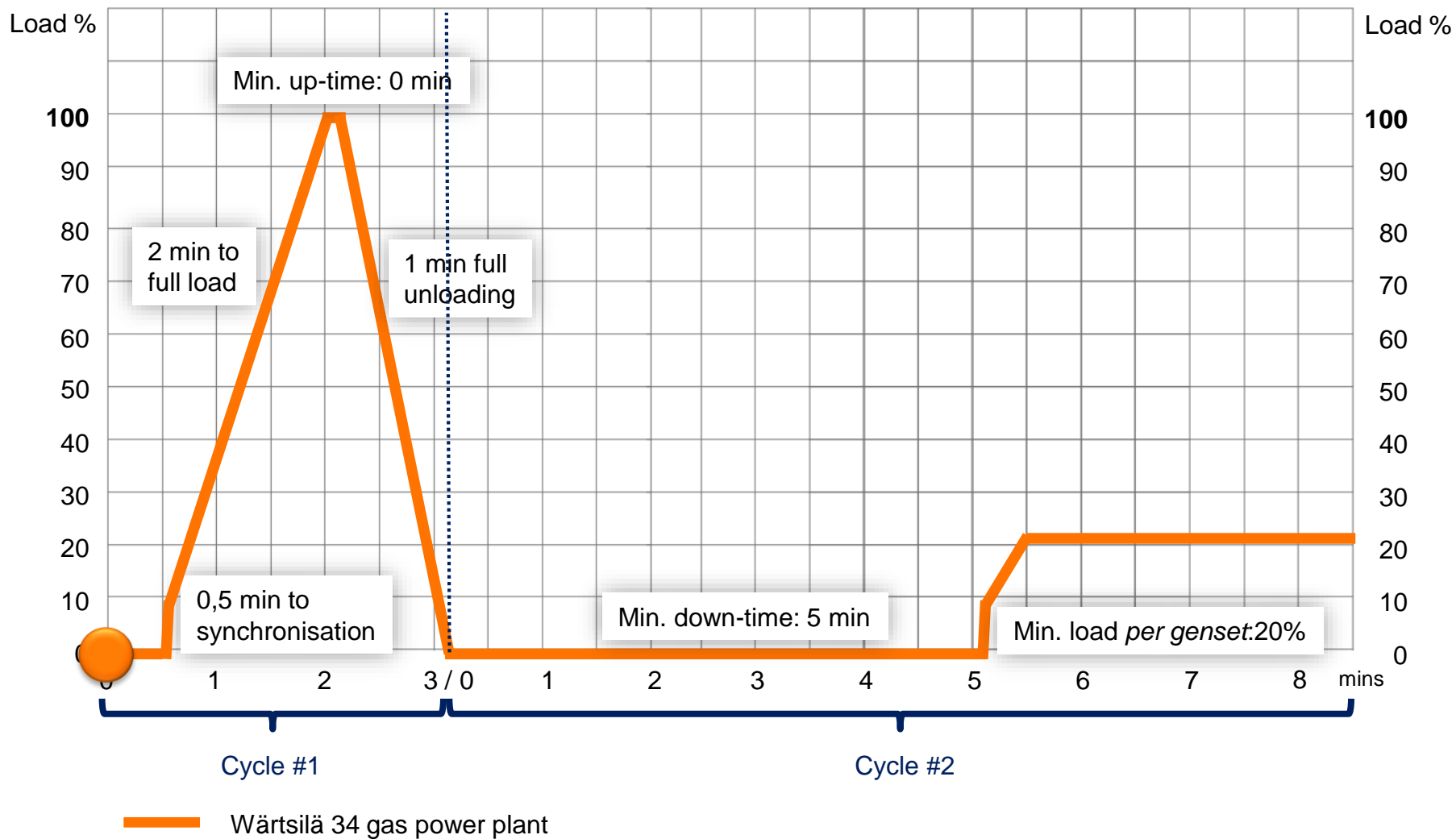
# Wärtsilä Gas Engines



	20V34SG-D	18V50SG-B
Output	9.34 MWe	18.76 MWe
Heat Rate* (HHV)	8,271 Btu/kWh	8,125 Btu/kWh
Speed	720 rpm	514 rpm
Dimensions (L/W/H)	42' x 11' x 15' 143 US tons	63' x 18' x 21' 391 US tons
•At generator terminals (pf 0.8, 0% tolerance)		

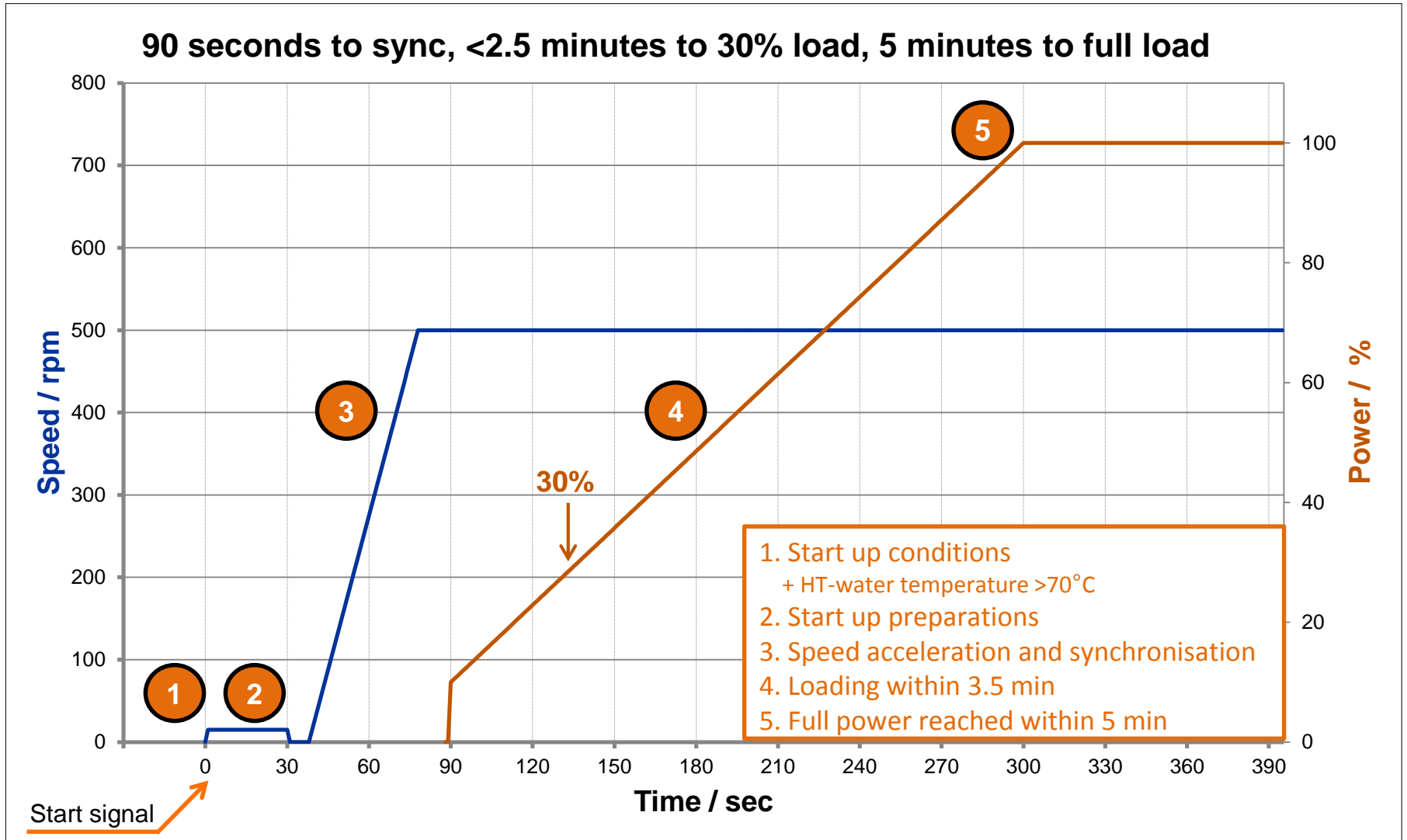


# Wärtsilä 34SG Fast Start





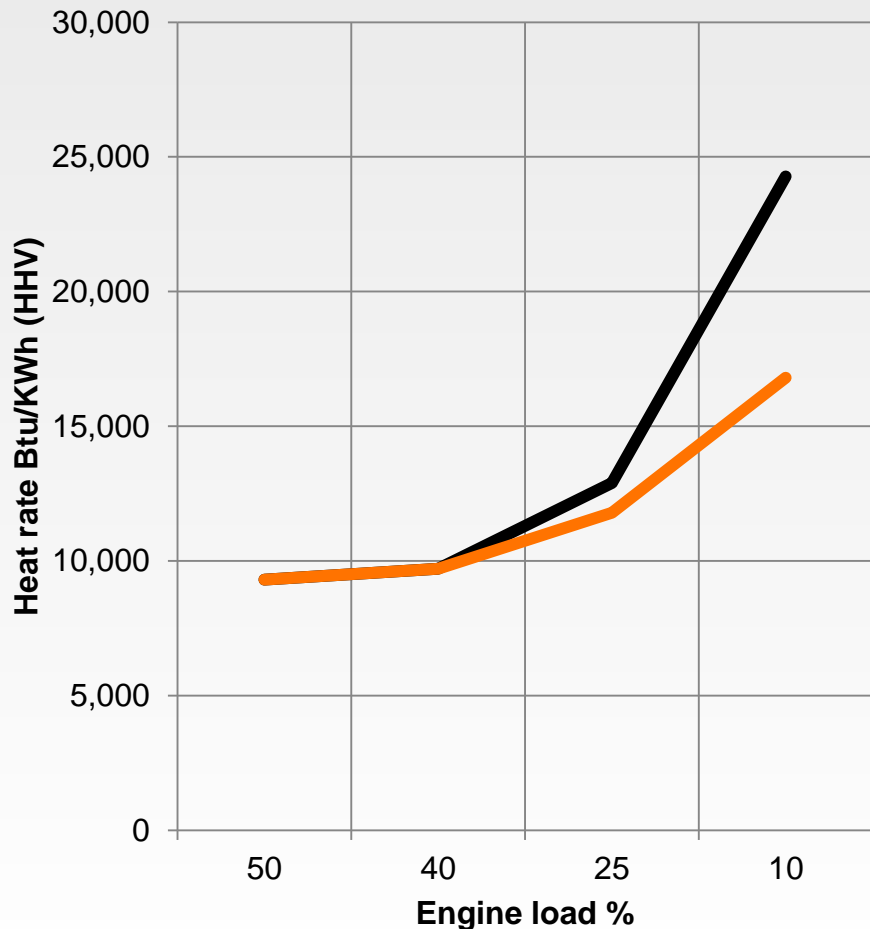
# Wärtsilä 50SG Fast Start



**Minimum up-time 0 minutes, shutdown 1 minute, minimum down time 5 minutes**

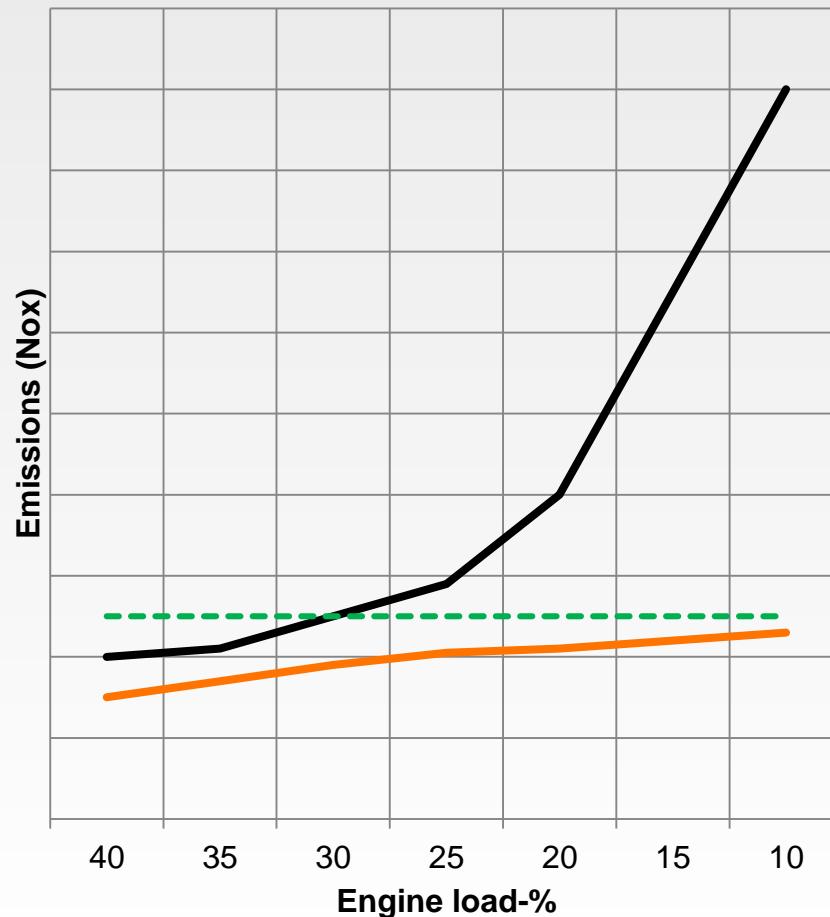
# Low Load Optimization – Reaching 10% min stable load

## Heat Rate



— No optimization    — Low load optimization

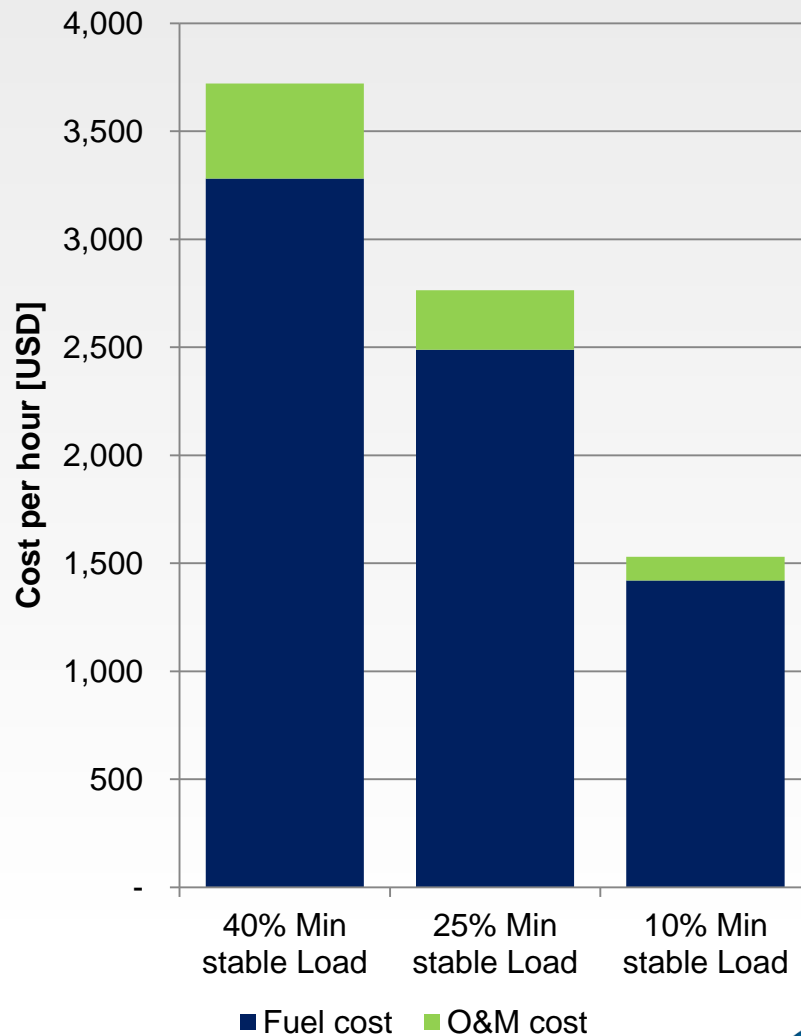
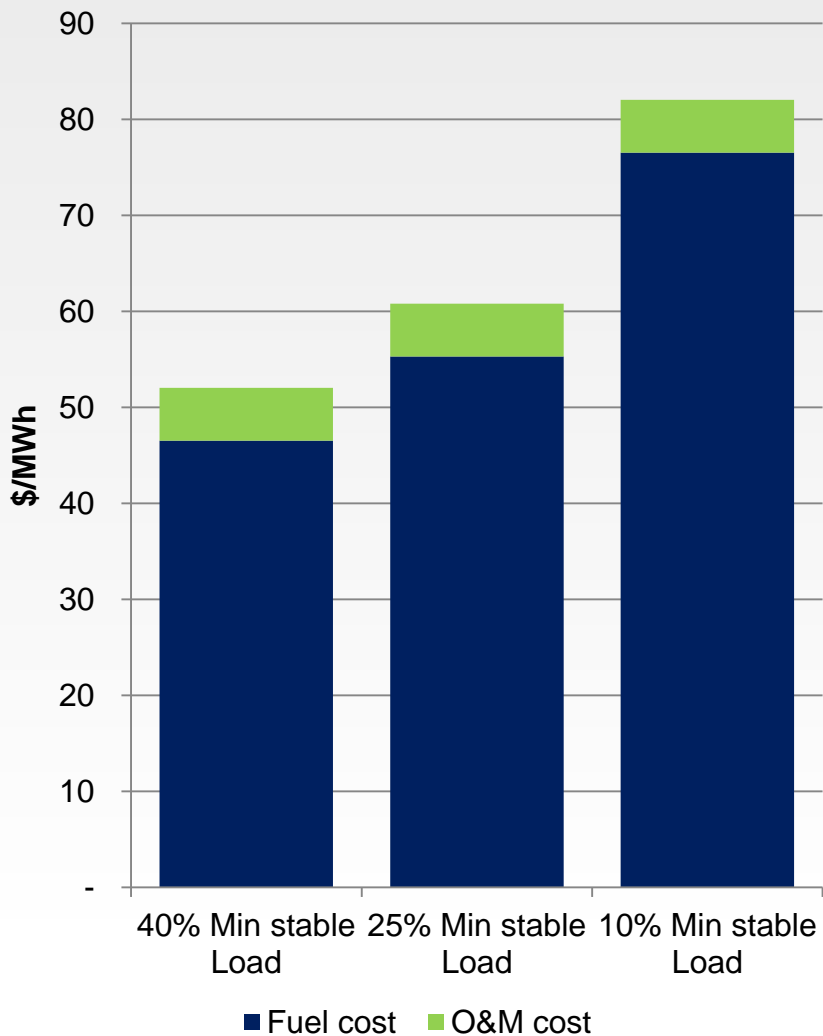
## Emissions



— No optimization    — Low load optimization  
 - - - Target limit

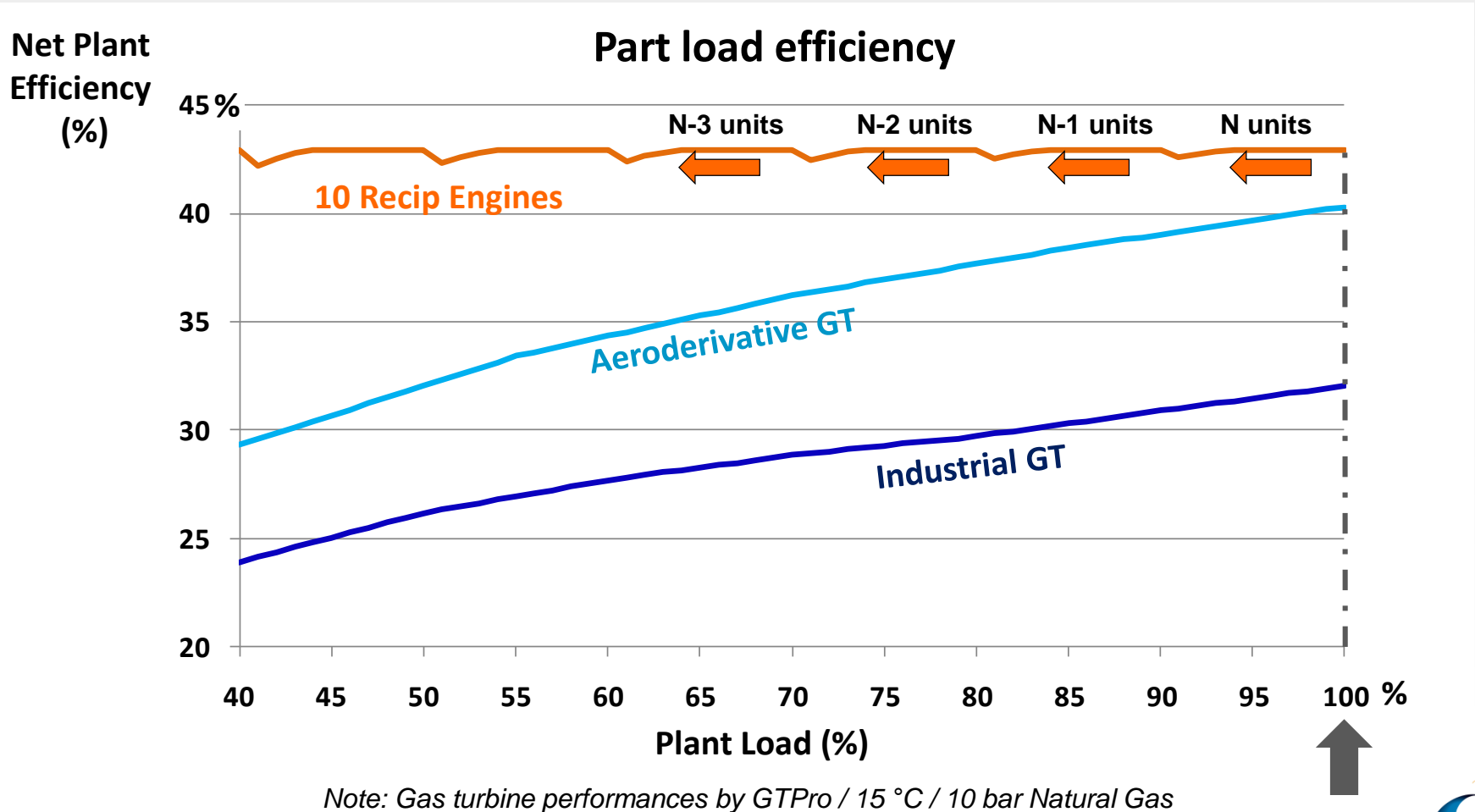
# Cost of operation at minimum stable load

Assumptions: Gas price 4.0 \$/Mbtu, 200 MW plant, O&M 5.5 \$/MWh

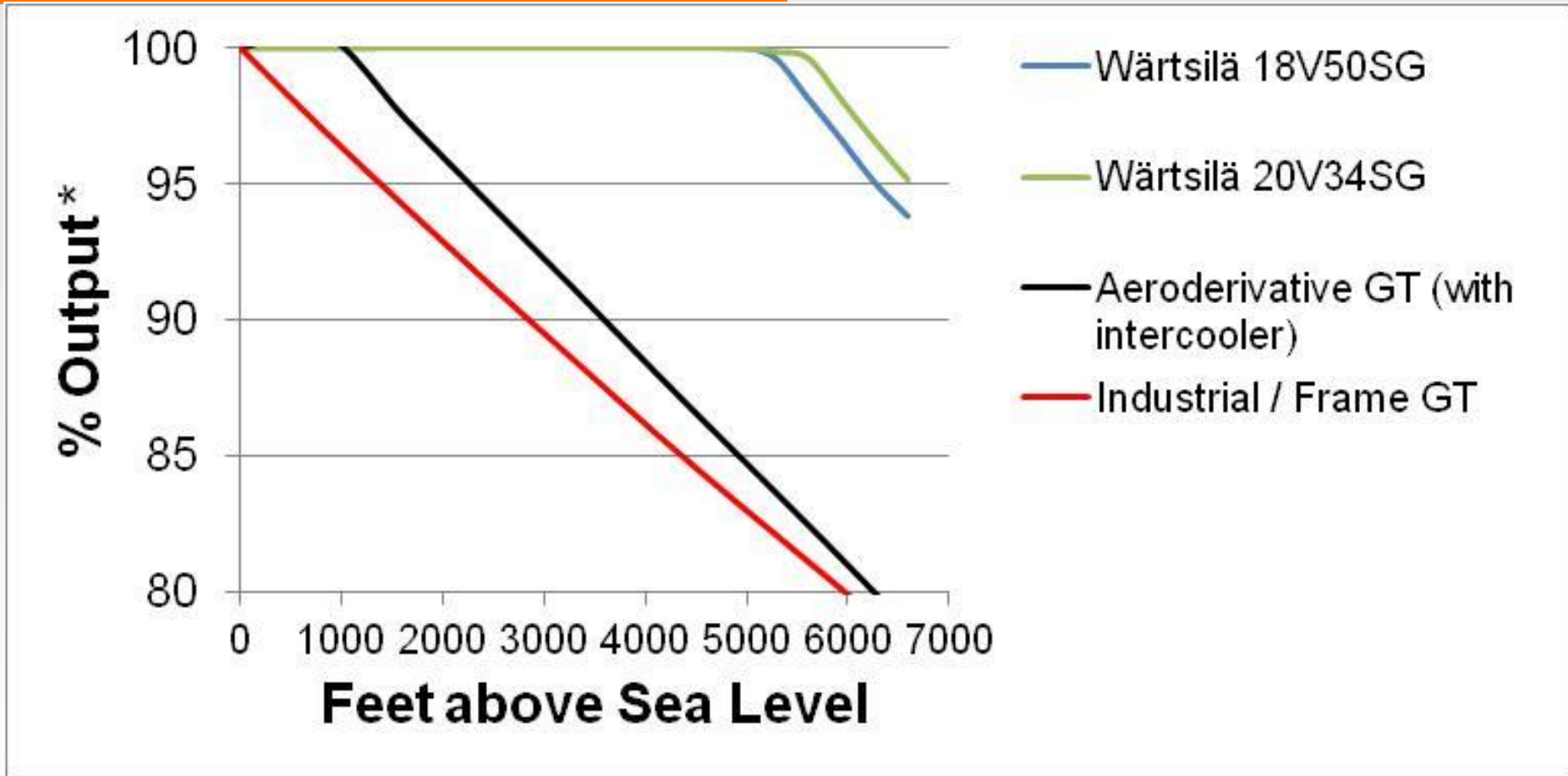


# Multi-engine advantage

Multi-engine solution allows for a **good partial load** efficiency with a plant turn down ratio of 20%



# Output as fn(Site Altitude)



\* Output; net, high side step up transformer, assuming 59 deg F, 350 psia gas (Wärtsilä requires 85 psia gas)

# Minimum water use

Wärtsilä' solutions minimize not only fuel but also water consumption thereby providing major environmental benefits. Our power plants use a **closed loop cooling system** that **requires minimum water**

Simple Cycle water consumption = **2 gal/engine/week**



# Low pressure gas

Wärtsilä power plants use **low pressure** natural gas (**75 - 125 psig**).  
No need for aux. gas compressor or high pressure gas line



# Reliable SG Solutions

## *Fleet Data (per engine)*

Availability > 96%

Start Reliability > 99%

EFOR < 1%



## Probability of @100 MW block going down on unplanned outage

6 x Wärtsilä18V50SG, 1% ^ 6

1-10 %

12 x Wärtsilä18V34SG, 1% ^ 12

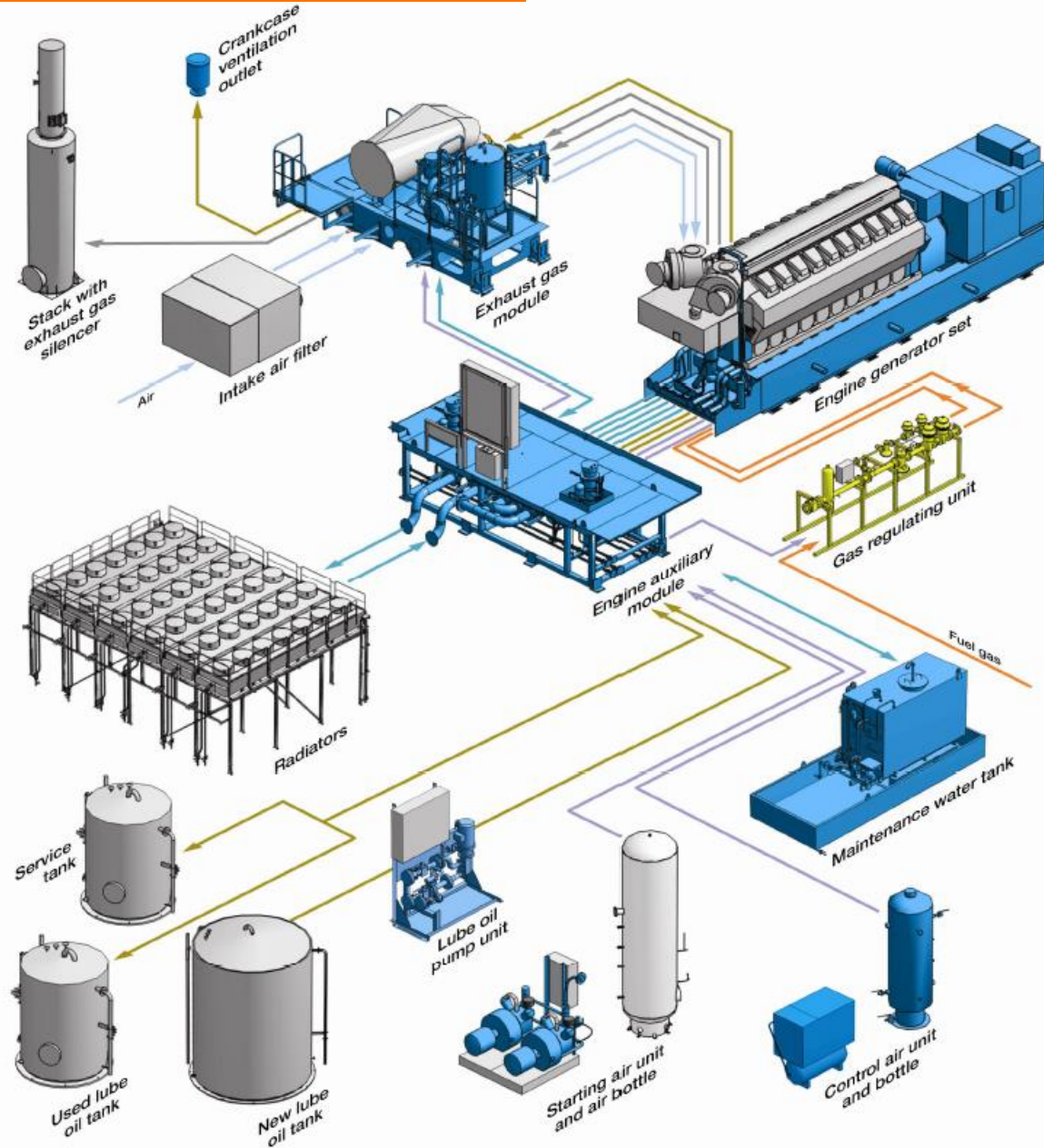
1-22 %

1 x Aero or Industrial GT

3-5 %



# Engine auxiliary systems



# O&M cost for 18V50SG

<b>SUMMARY</b>	<b>\$/MWh</b>	<b>Weight %</b>
Variable Fee	1.30	25%
Major Maint.	2.00	39%
Lube Oil	0.78	15%
SCR Reagent	0.90	18%
SCR Catalyst	0.16	3%
<b>Total</b>	<b>5.14</b>	<b>100%</b>

Assumptions: 3000 hours, 15 years, 18V50SG plant

## For the 34SG / 50SG

	<u>g/kWh</u>	<u>ppm</u>
NOx	0.07/0.07	5/5*
CO	0.12/0.12	15/15
Total VOCs *	0.12/0.12	25/25
CO2 *	Approx 460/446	

\* (dry, at 15 vol-% O<sub>2</sub>)

\* *Varies with VOC composition of natural gas*

# Modeling approach

## Technical input

- Heat rates (GTPro)
- Part load heat rates
- Variable O&M cost
- Capacity derating
- Start-up times
- Start-up costs

## Market input

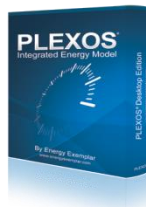
- Day-ahead prices
- Real Time Market prices
- Ancillary service prices
- Daily gas price

## Site input

- Elevation
- Price node information
- Hourly temperature data

## Modeling platform

- Tool for backcast analysis
- 5 minute granularity to analyze the real time market
- Optimize the operation of asset against the LMP and offer capacity optimally between energy and A/S
- Assumes that capacity fits into the merit if it is feasible to operate the plant
- Takes into account temperature derating on hourly level



## Market model outputs

- Running hours and number of starts
- 5 minute dispatch profile
- Revenue per market
- Operating costs (fuel, VOM, start-up costs)
- Gross margin from the market operations

## Investment inputs

- Investment cost
- Fixed Operation & Maintenance costs
- Capital structure
- Capacity payment

## Financial model

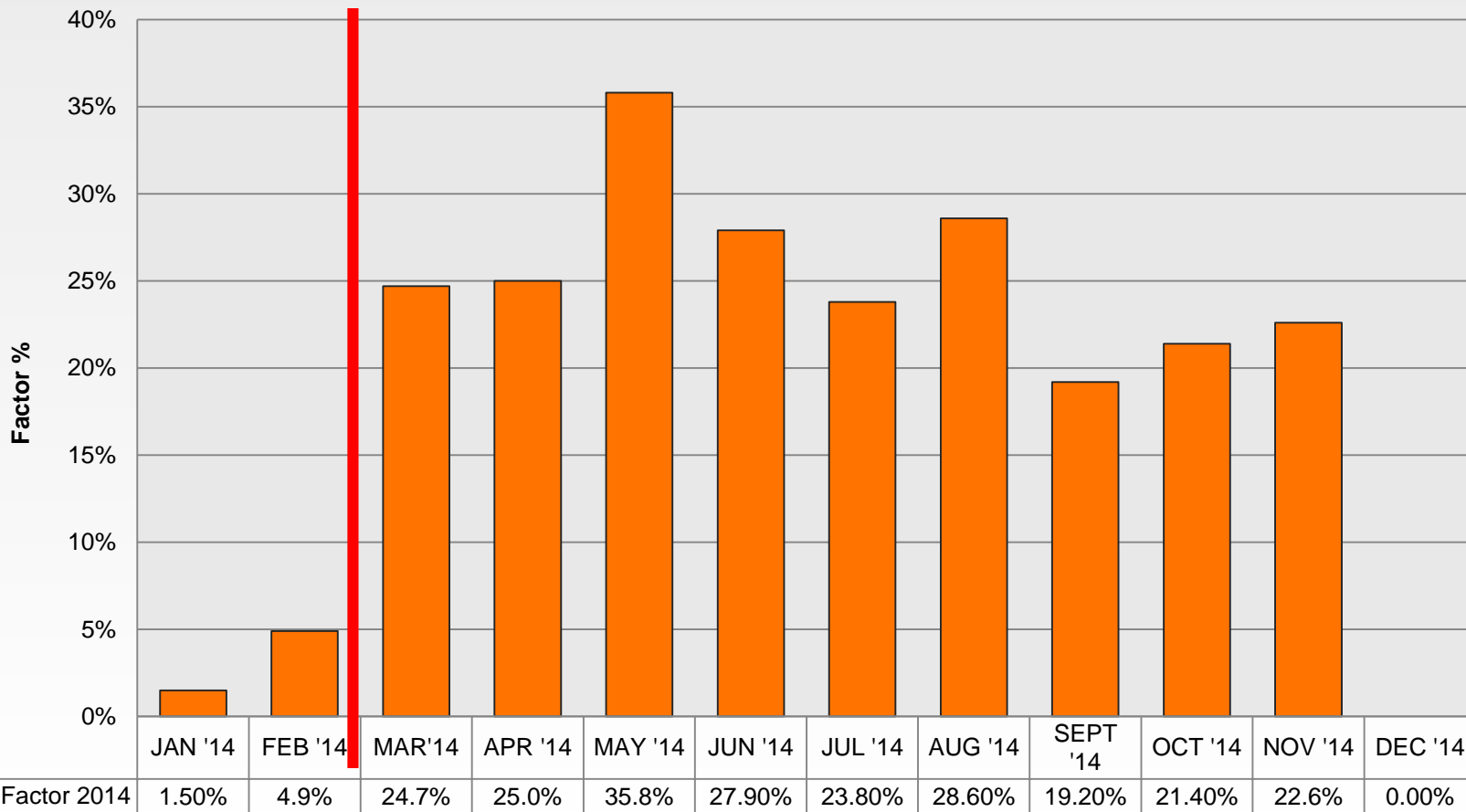
- Project feasibility
- Project IRR
- Equity IRR
- Cash flows

# Background

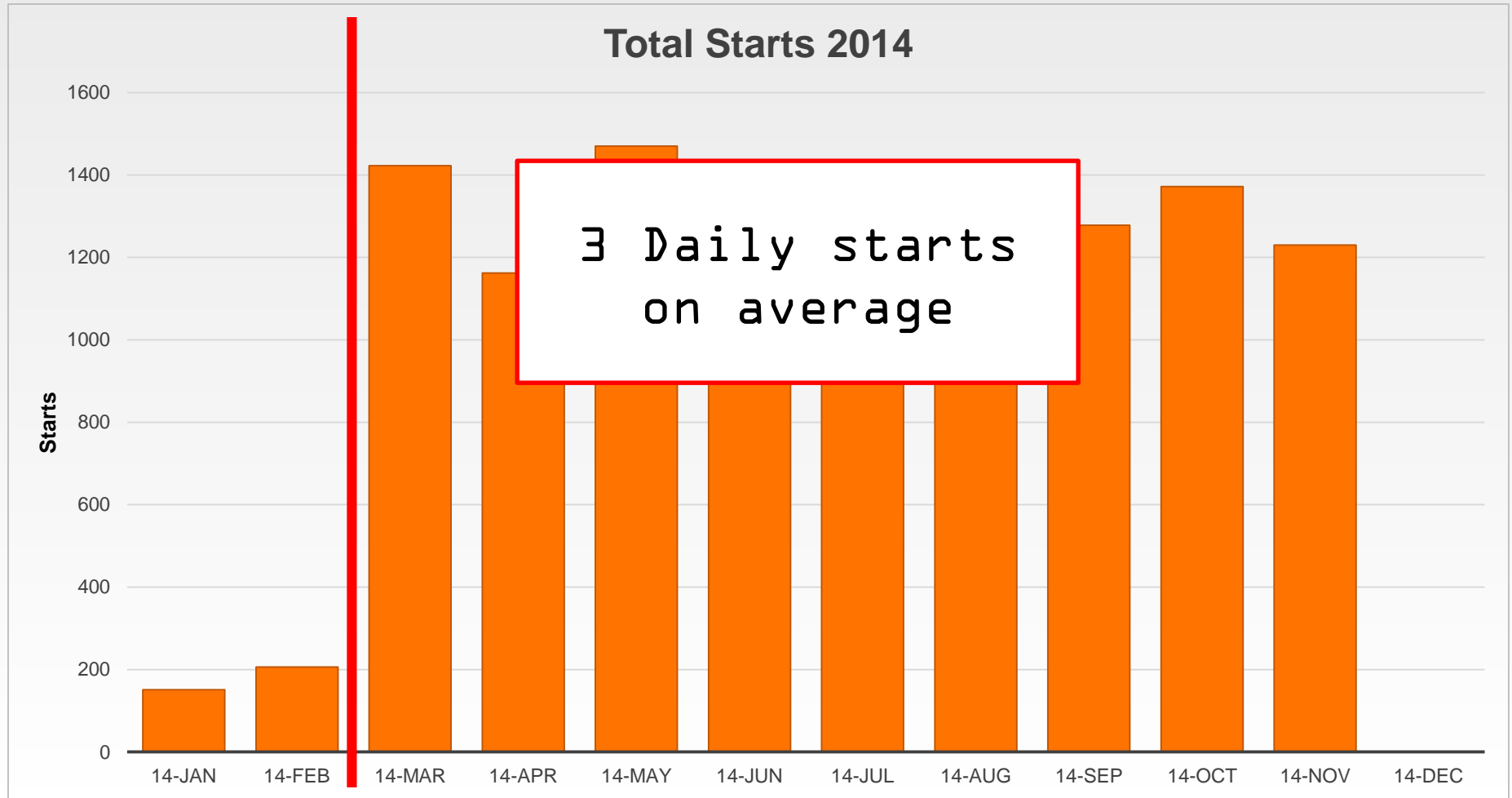
- SPP Integrated Market Place was launched in March 2014
  - Market wide balancing and introduction of real-time balancing market
  - 5 minute price settlement
  - Co-optimization of energy and ancillary services in real-time
- The existing Wartsila plants operate with 35% capacity factor and have around 1,000 starts per engine on annual basis
  - Very big change compared to previous years
  - The market prices in the real-time market have been volatile and lucrative A/S prices
- Great interest from market participants towards Wartsila solutions
  - What is driving the development?

# Antelope Station in SPP - Utilization

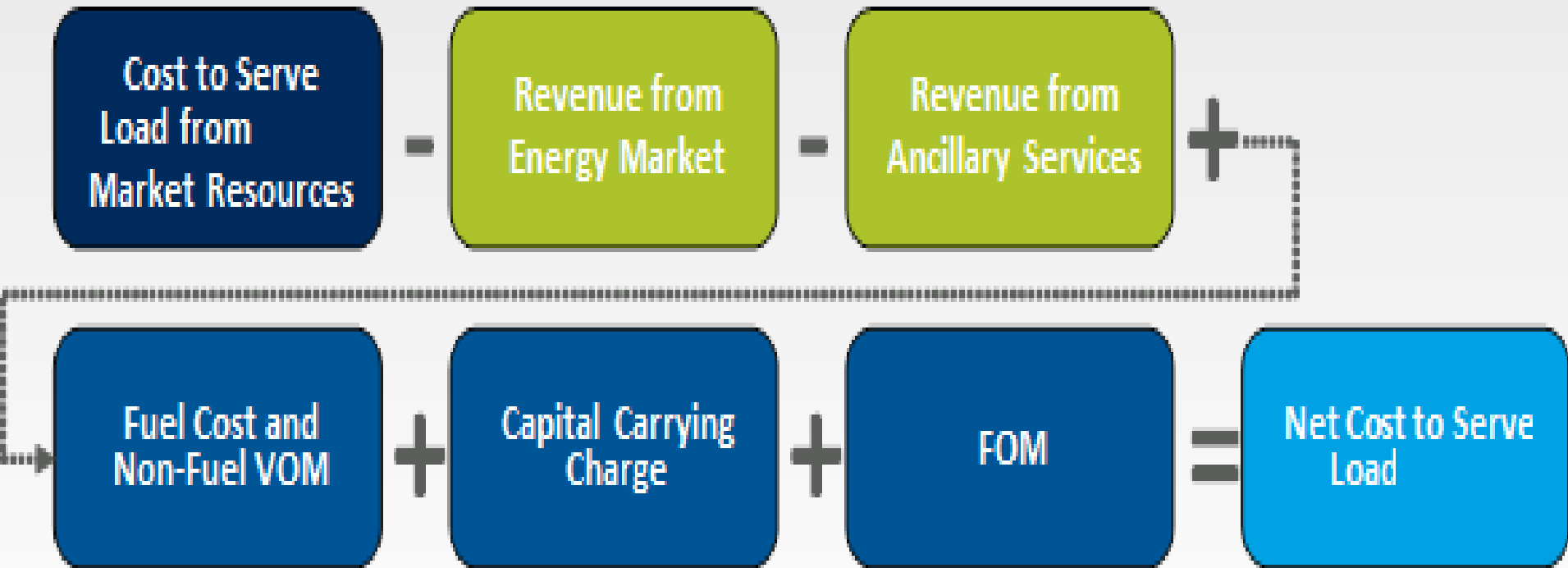
## 2014 Utilization Factor



# Antelope Station in SPP – Starts



# Net cost to serve load as an investment metric



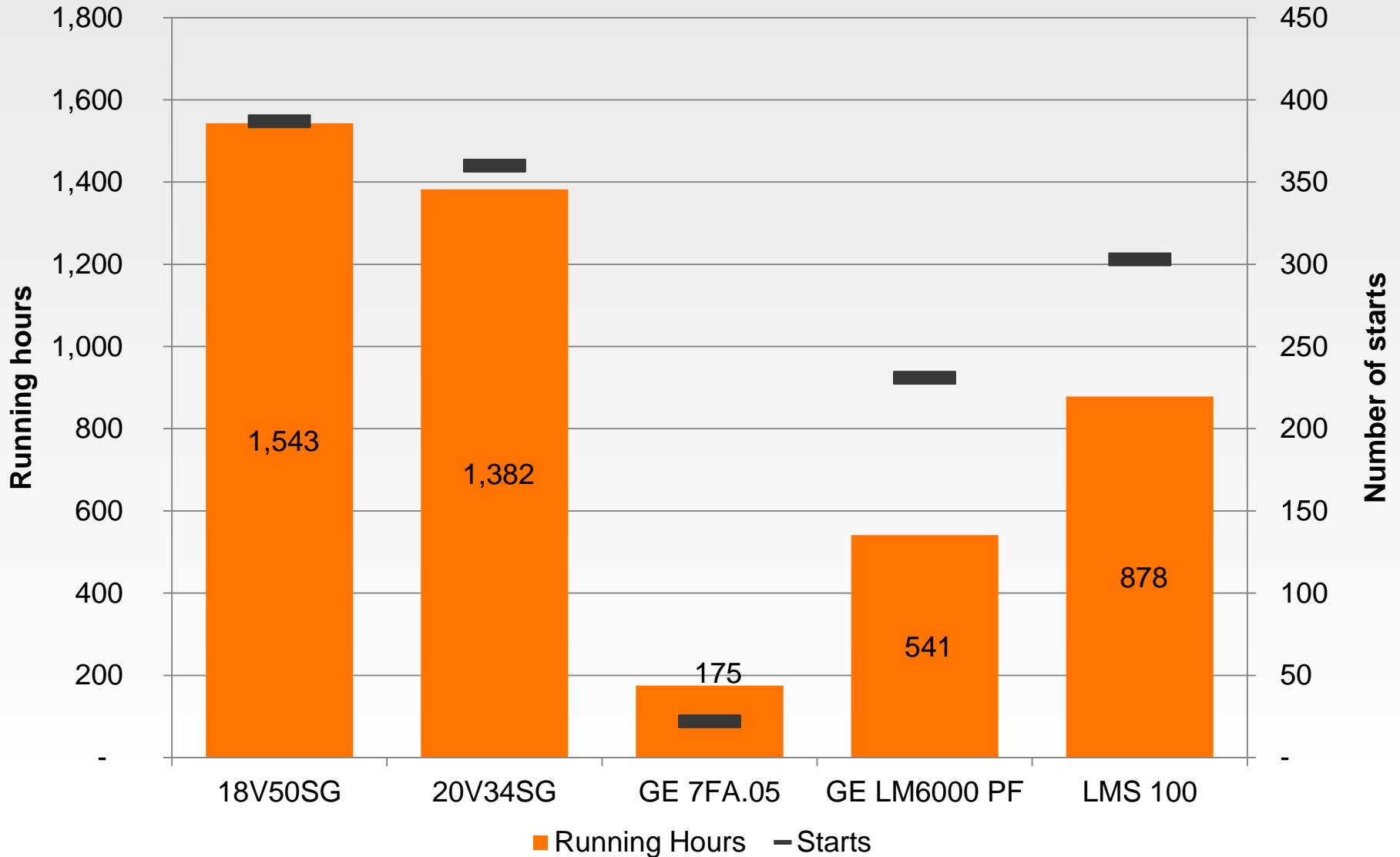


# Modeling inputs –Technical performance

	18V50SG	18V50SG	20V34SG	20V34SG	7FA.05	LM6000	LMS100
Output (ISO)	18.4 MW	18.4 MW	9.1 MW	9.1 MW	227 MW	41.5 MW	102 MW
Output (Site, ISO temp)	200 MW	200 MW	200 MW	200 MW	200 MW	200 MW	200 MW
Investment cost	700 USD/KW	700 USD/KW	700 USD/KW	700 USD/KW	500 USD/KW	750 USD/KW	750 USD/KW
Efficiency (ISO)	8,266 Btu/KWh	8,266 Btu/KWh	8,455 Btu/KWh	8,455 Btu/KWh	9,838 Btu/KWh	9,328 Btu/KWh	9,105 Btu/KWh
Minimum stable load	40%	10%	40%	10%	40%	40%	40%
Efficiency at minimum stable load	9,711 Btu/KWh	17,490 Btu/KWh	10,142 Btu/KWh	18,200 Btu/KWh	13,899 Btu/KWh	12,534 Btu/KWh	12,190 Btu/KWh
Start-up time to full load	5 min	5 min	5 min	5 min	15 min	10 min	10 min
Start-up cost	0 USD/start	0 USD/start	0 USD/start	0 USD/start	15,000 USD/Start	0 USD/start	0 USD/start
VOM	5.5 USD/MWh	5.5 USD/MWh	5.5 USD/MWh	5.5 USD/MWh	0.9 USD/MWh	3.0 USD/MWh	3.0 USD/MWh
FOM	15 USD/kW/y	15 USD/kW/y	15 USD/kW/y	15 USD/kW/y	15 USD/kW/y	15 USD/kW/y	15 USD/kW/y

# **TRADITIONAL ANALYSIS APPROACH – DAY-AHEAD MARKET ONLY**

# Operating profiles – Day-ahead energy only

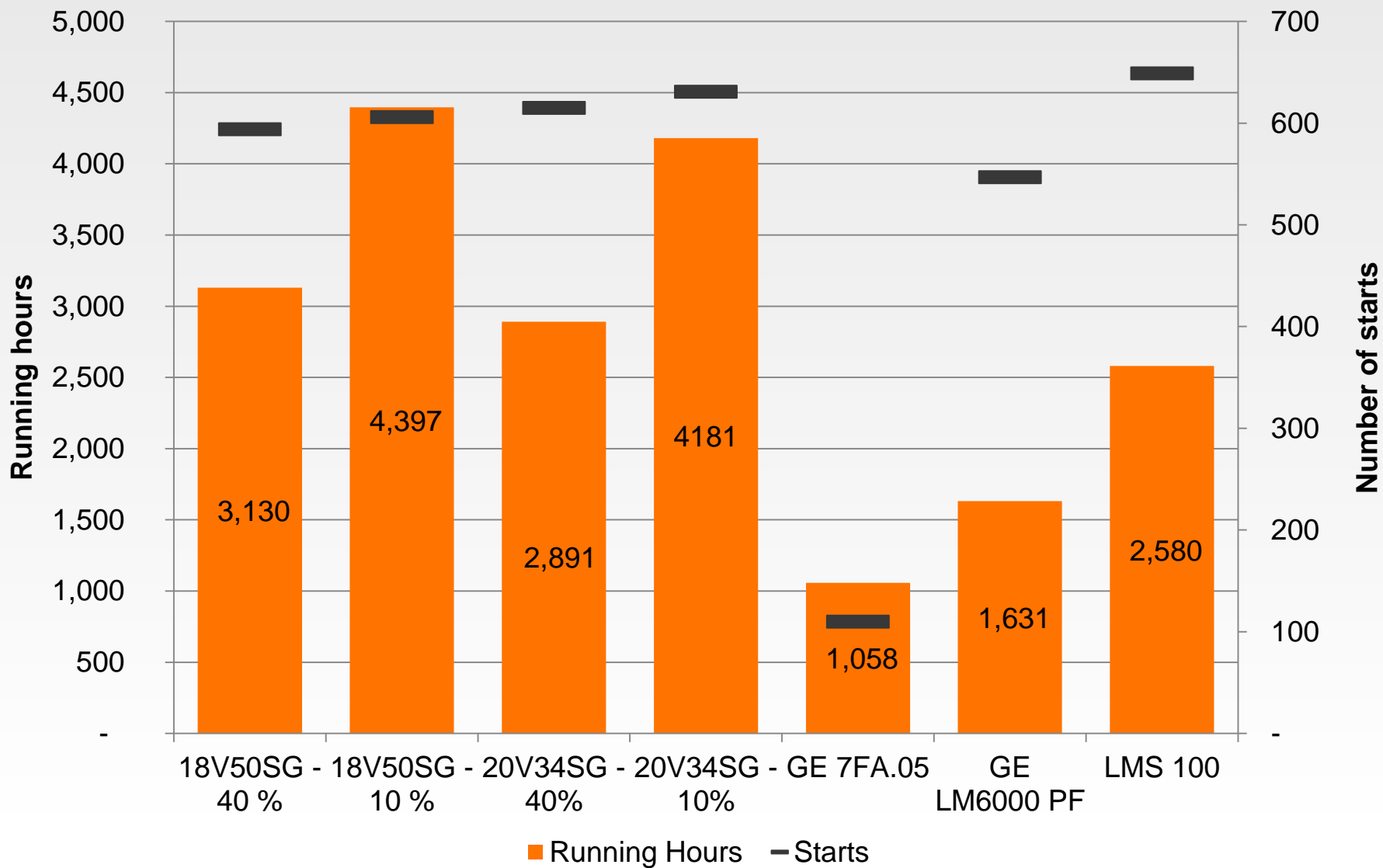


# Case Studies

	18V50SG	20V34SG	GE 7FA.05	GE LM6000 PF	LMS 100
<b>MARKET PROCUREMENT COST</b>					
Market procurement cost [MUSD]	61.9	61.9	61.9	61.9	61.9
<b>REVENUE FROM ENERGY MARKET</b>					
Revenue from day-ahead market [MUSD]	16.0	14.5	2.0	5.5	8.9
Revenue from real-time market [MUSD]	0.0	0.0	0.0	0.0	0.0
Revenue from Ancillary services market [MUSD]	0.0	0.0	0.0	0.0	0.0
<b>TOTAL</b>	<b>-16.0</b>	<b>-14.5</b>	<b>-2.0</b>	<b>-5.5</b>	<b>-8.9</b>
<b>FUEL COST + VOM</b>					
Fuel cost [MUSD]	10.6	9.7	1.4	3.9	6.1
Variable O&M [MUSD]	1.2	1.1	0.0	0.4	0.6
Start-up fuel [MUSD]	0.1	0.1	0.0	0.2	0.2
Start-up cost [MUSD]	0.0	0.0	0.4	0.0	0.0
Market procurement [MUSD]	0.0	0.0	0.0	0.0	0.0
<b>TOTAL</b>	<b>12.0</b>	<b>11.0</b>	<b>1.9</b>	<b>4.4</b>	<b>7.0</b>
<b>CAPITAL CARRYING CHARGE</b>					
Weighted Average Cost of Capital [%]	5.5%	5.5%	5.5%	5.5%	5.5%
Paypack-time [y]	20	20	20	20	20
Investment cost [USD/KW]	700	700	500	750	750
Capital cost [MUSD]	140.0	140.0	100.0	150.0	150.0
<b>Capital carrying charge [MUSD]</b>	<b>11.7</b>	<b>11.7</b>	<b>8.4</b>	<b>12.6</b>	<b>12.6</b>
<b>FIXED OPERATION AND MAINTENANCE</b>					
Fixed operation and maintenance [USD]	3.0	3.0	3.0	3.0	3.0
<b>TOTAL</b>	<b>3.0</b>	<b>3.0</b>	<b>3.0</b>	<b>3.0</b>	<b>3.0</b>
<b>NET COST TO SERVE LOAD [USD]</b>	<b>72.6</b>	<b>73.1</b>	<b>73.1</b>	<b>76.4</b>	<b>75.5</b>

# **VALUE OF FLEXIBILITY – INCLUDE A/S AND REAL TIME MARKET**

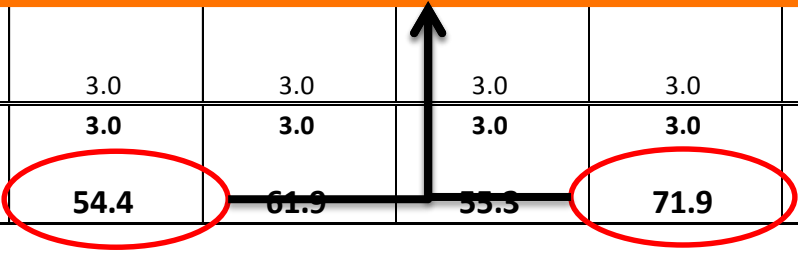
# Case Studies



# Net cost to serve load – Full optimization

	18V50SG -40%	18V50SG -10%	20V34SG -40%	20V34SG -10%	GE 7FA.05	GE LM6000 PF	LMS 100
<b>MARKET PROCUREMENT COST</b>							
Market procurement cost [MUSD]	61.9	61.9	61.9	61.9	61.9	61.9	61.9
<b>REVENUE FROM ENERGY MARKET</b>							
Revenue from energy DAH + RT [MUSD]	37.3	41.8	35.8	40.5	10.0	17.8	25.2
Revenue from Ancillary services market [MUSD]	11.9	21.9	11.5	21.5	2.4	4.9	7.2
<b>TOTAL</b>	<b>-49.2</b>	<b>-63.6</b>	<b>-47.2</b>	<b>-62.0</b>	<b>-12.4</b>	<b>-22.7</b>	<b>-32.4</b>
<b>FUEL COST + VOM</b>							
Fuel cost [MUSD]	23.9	26.9	23.9	26.4	7.7	9.7	15.6
Variable O&M [MUSD]	2.7	3.0	2.7	2.9	0.2	1.0	1.6
Start-up fuel [MUSD]	0.4	0.2	0.3	0.2	0.2	1.0	1.1
Start-up cost [MUSD]	0.0	0.0	0.0	0.0	2.2	0.0	0.0
Market procurement [MUSD]	6.4	11.3	5.7	11.2	0.9	3.2	4.0
<b>TOTAL</b>	<b>33.5</b>	<b>41.5</b>	<b>32.5</b>	<b>40.7</b>	<b>11.1</b>	<b>14.8</b>	<b>22.3</b>
<b>CAPITAL CARRYING CHARGE</b>							
Weighted Average Cost of Capital [%]	5.5%						5.5%
Paypack-time [y]	20						20
Investment cost [USD/KW]	700						750
Capital cost [MUSD]	140.0						150.0
<b>Capital carrying charge [MUSD]</b>	<b>11.7</b>						<b>12.6</b>
<b>FIXED OPERATION AND MAINTENANCE</b>							
Fixed operation and maintenance [USD]	3.0	3.0	3.0	3.0	3.0	3.0	3.0
<b>TOTAL</b>	<b>3.0</b>	<b>3.0</b>	<b>3.0</b>	<b>3.0</b>	<b>3.0</b>	<b>3.0</b>	<b>3.0</b>
<b>NET COST TO SERVE LOAD [USD]</b>	<b>60.9</b>	<b>54.4</b>	<b>61.9</b>	<b>55.3</b>	<b>71.9</b>	<b>69.6</b>	<b>67.4</b>

**17.5 MUSD  
annual savings**



# Summary – Simple Cycle comparison in SPP

- Flexible **Wartsila** power plant provides lowest cost to serve load for the load serving entity
- Annual savings **17.5 MUSD** with Wartsila compared to “industry standard” gas turbine solution
  - Net present value of savings over **200 MUSD** over the lifetime (20 y)
- **Flexibility** is the key driver behind the lowest net cost to serve load
  - Very dynamic operational profile required to extract value from market
  - Wide load range (10%-100%) enables lucrative A/S market income



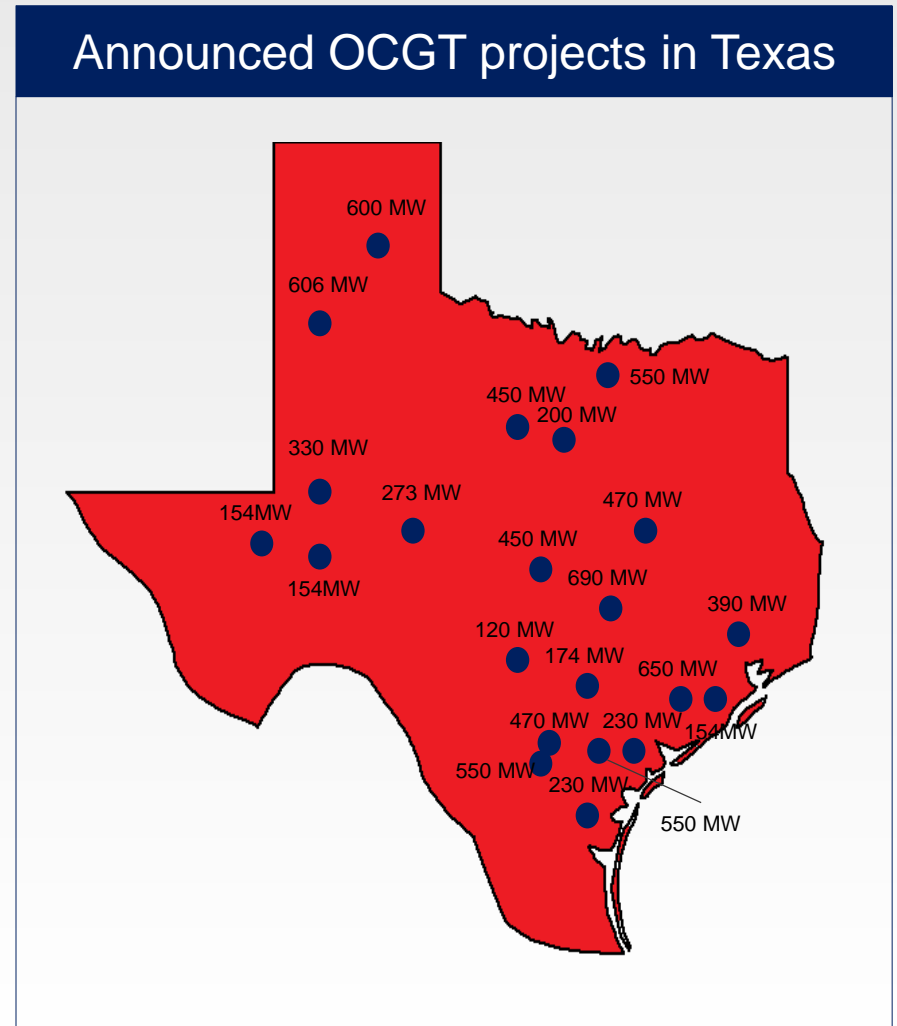


# ERCOT Market

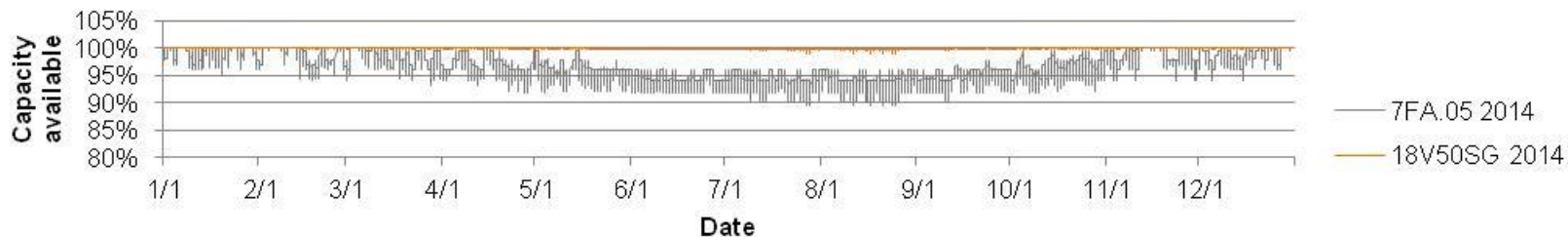
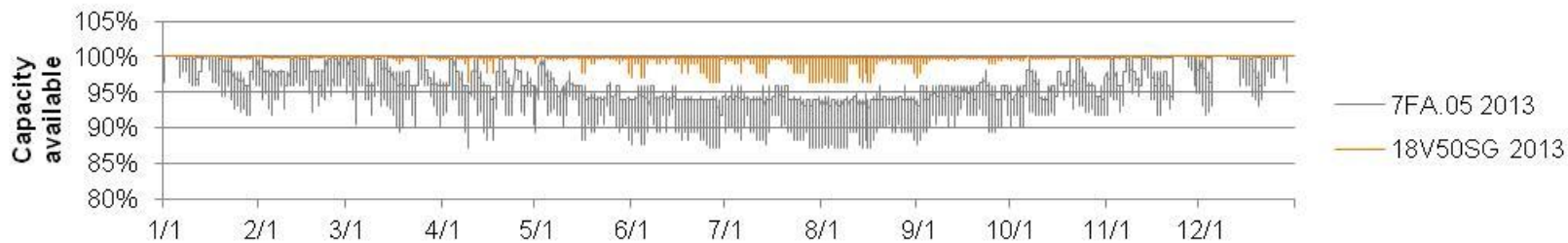
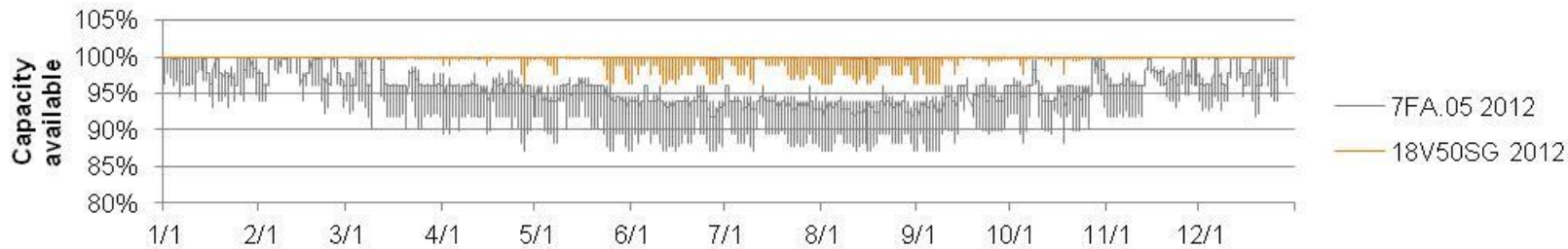
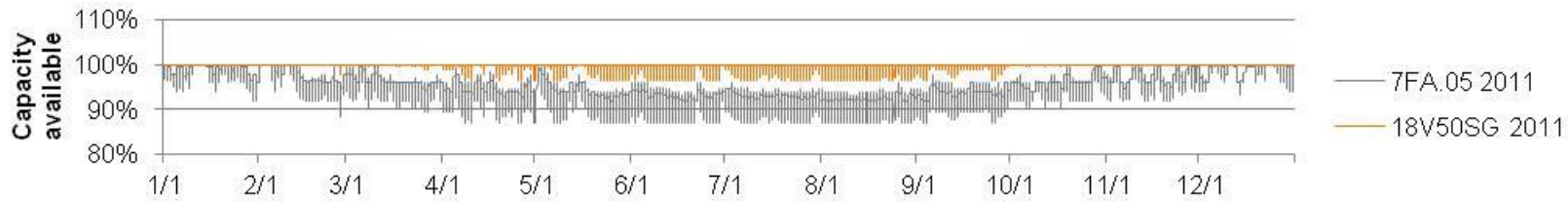
*Value of Wärtsilä 18V50SG vs. GE 7FA.05*

# Background

- The increased risk of scarcity pricing events in future has increased the project development **activity in ERCOT**
- **More than 20 OCGT** projects announced in Texas, totaling up to **8,000 MW**
- Preferred option is GE's **7FA.05** industrial gas turbine
- **Physical hedge** against the market prices
- The main driver for 7FA.05 investment is the low capital cost, but could higher CAPEX **Wartsila 18V50SG** be competitive in the market?



# Capacity derating in hot conditions – Texas example



**7FA.05 87%**  
**18V50SG 97%**

# Modeling inputs

	18V50SG	7FA.05
Output (ISO)	18.4 MW	227 MW
Output (Site, ISO temp)	12 x 18.4MW = 221 MW	227 MW
Overnight EPC cost	700 USD/KW	500 USD/KW
Efficiency (ISO)	8,266 Btu/KWh	9,838 Btu/KWh
Minimum stable load	20%	40%
Efficiency at minimum stable load	10,064 Btu/KWh	13,899 Btu/KWh
Start-up time to full load	5 min	15 min
Start-up cost (maintenance)	0 USD/start	15,000 USD/Start
Start-up fuel cost	0.3 MBtu/MW/start	1.5 MBtu/MW/start
VOM	5.5 USD/MWh	0.9 USD/MWh
Electricity price	Houston Hub prices	Houston Hub prices
Gas price	Daily hub prices	Daily hub prices

# Required heat rate option fee to finance the investment

## ASSUMPTIONS - 18V50SG

Capacity [MW]	221	Overnight EPC cost [\$/KW]	700	Equity share	30%
Project lifetime [years]	20	Owner's cost [\$/KW]	75	Debt share	70%
Tax rate	37.5%	Construction period [months]	14	Loan term [years]	20
Interest rate	5%	Total investment cost [\$ Mn]	175	Fixed O&M [\$/KW]	11.0

## ASSUMPTIONS - GE 7FA.05

Capacity [MW]	227	Overnight EPC cost [\$/KW]	500	Equity share	30%
Project lifetime [years]	20	Owner's cost [\$/KW]	75	Debt share	70%
Tax rate	37.5%	Construction period [months]	14	Loan term [years]	20
Interest rate	5%	Total investment cost [\$ Mn]	133	Fixed O&M [\$/KW]	6.4

	REQUIRED OPTION FEE	GE 7FA.05	W18V50SG
Debt interest [\$]		4 545 105	5 964 090
Debt repayment [\$]		4 661 646	6 117 015
Total debt service [\$]		<b>9 206 751</b>	<b>12 081 105</b>
Minimum DSCR		1.2	1.2
Required income for debt service		<b>11 048 101</b>	<b>14 497 326</b>
Fixed Operations & Maintenance [\$]		1 448 260	2 435 420
Required debt service + Fixed O&M [\$]		<b>12 496 361</b>	<b>16 932 746</b>
Contracted capacity [MW]		197	214

Wartsila 18V50SG requires 1.3 \$/KW/Month higher option fee to ensure financing



# Fair value of a heat rate call option in ERCOT

"FUTURE" VALUE OF HEAT RATE CALL OPTION IN ERCOT - 7FA.05	GE 7FA.05 2011	GE 7FA.05 2012	GE 7FA.05 2013	GE 7FA.05 2014	GE 7FA.05 Average
Contracted capacity [MW]	197	197	197	197	197
Average gas price [\$/Mbtu]	4.0	2.7	3.7	4.4	3.7
Heat rate at 95 F [btu/KWh]	10 047	10 047	10 047	10 047	10 047
Variable O&M [\$/MWh]	0.9	0.9	0.9	0.9	0.9
Start-up cost [\$/start]	15 000	15 000	15 000	15 000	15 000
Minimum run time [h]	6	6	6	6	6
Implied heat rate for call option [btu/KWh]	<b>457</b>	<b>990</b>	<b>693</b>	<b>171</b>	<b>828</b>
Hours when price over implied heat rate [h]	819	611	555	693	670
Option called [times]	120	94	68	98	95
Option called [hours]	768	575	421	608	593
	<b>13</b>	<b>14</b>	<b>13</b>	<b>13</b>	<b>13</b>
"FUTURE" VALUE OF HEAT RATE CALL OPTION IN ERCOT	W18V50SG 2011	W18V50SG 2012	W18V50SG 2013	W18V50SG 2014	W18V50SG Average
Contracted capacity [MW]	214	214	214	214	214
Average gas price [\$/Mbtu]	4.0	2.7	3.7	4.4	3.7
Heat rate at 95 F [btu/KWh]	8282	8282	8282	8282	8282
Variable O&M [\$/MWh]	5.5	5.5	5.5	5.5	5.5
Start-up cost [\$/start]	0	0	0	0	0
Minimum run time [h]	0.1	0.1	0.1	0.1	0.1
Implied heat rate for call option [btu/KWh]	<b>286</b>	<b>737</b>	<b>355</b>	<b>201</b>	<b>395</b>
Hours when price over implied heat rate [h]	2692	2906	2590	2527	2679
Option called [times]	456	443	483	480	466
Option called [hours]	2692	2906	2590	2527	2679
	<b>9</b>	<b>9</b>	<b>9</b>	<b>9</b>	<b>9</b>
Heat rate call option fair value [\$]	28 825 712	9 715 036	6 751 048	10 192 327	13 871 030

2.16 \$/KW/m difference



# Business case situation

## IPP 1

Decides to develop 7FA.05 project

Sells long term heat rate option contract with 5.29 \$/KW/Month

Over the years pays 3.24 \$/KW/Month thru financial settlement

## IPP 2

Decides to develop Wartsila 18V50SG project

Sells long term heat rate option contract with 7.45\* \$/KW/Month

Over the years pays 5.4 \$/KW/Month thru financial settlement

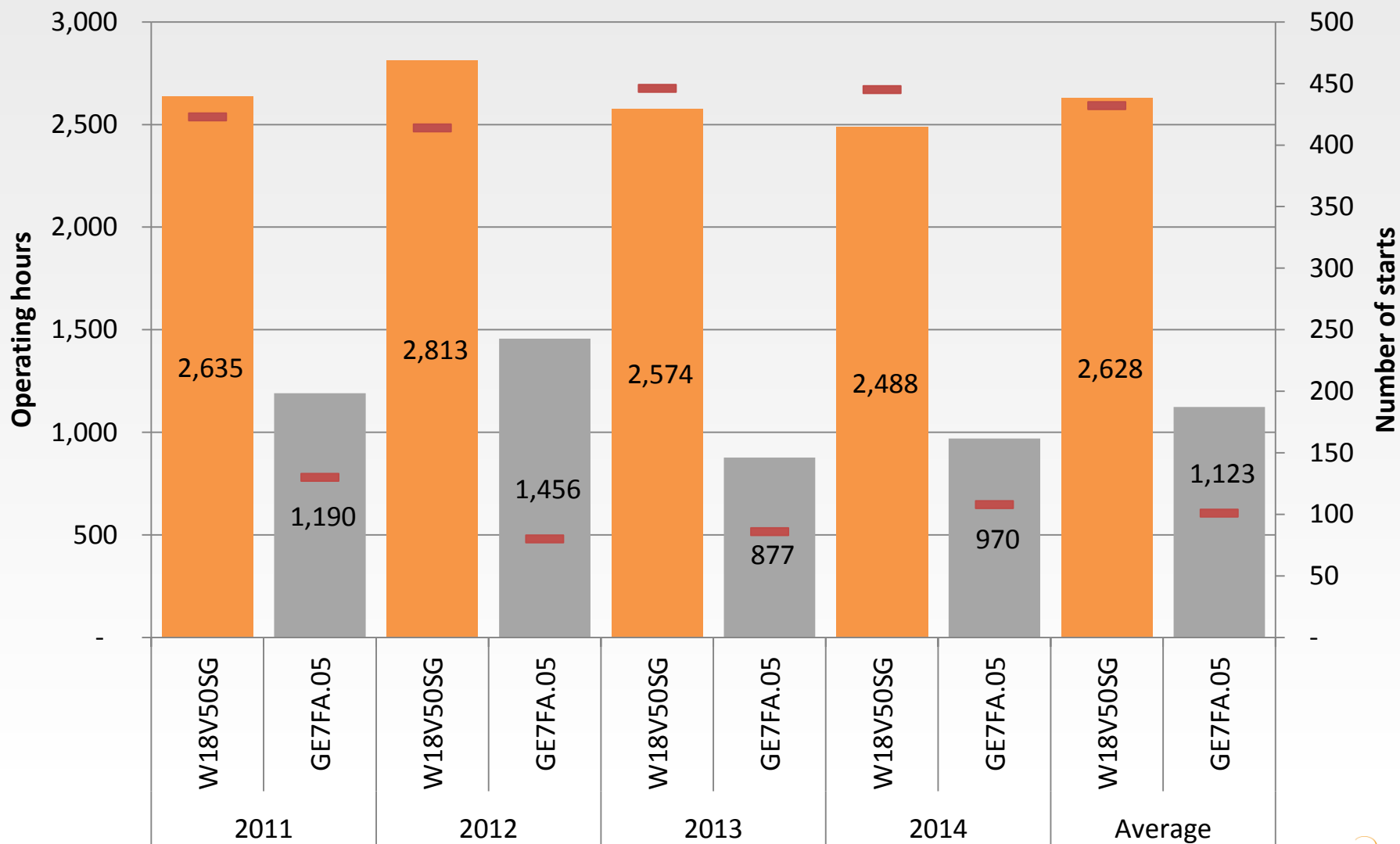
\* If a utility is willing to pay 5.29 \$/KW/month for 7FA.05 it should be willing to pay the premium of 2.16 \$/KW/month for the hedge with Wartsila 18V50SG as the hedge is more valuable.

- 
- A person with dark hair is seen from the side, looking at a computer monitor. The monitor displays a dashboard with various charts and data points. The background is slightly blurred, showing what appears to be a control room or office environment.
- 1. Day-ahead (DAH) only**
  - 2. DAH+ Real Time Optimization (RT)**
  - 3. DAH+ RT + Ancillary Services (A/S)**



# Day Ahead Only (DAH)

# Operating profiles – DAH only



# Project feasibility – 7FA.05 DAH only

## ASSUMPTIONS - GE 7FA.05

Capacity [MW]	227	Overnight EPC cost [\$/KW]	500	Equity share	30%	Contracted Capacity [MW]	197
Project lifetime [years]	20	Owner's cost [\$/KW]	75	Debt share	70%	Heat rate option fee [\$/KW/m]	5.29
Tax rate	37.5%	Construction period [months]	14	Loan term [years]	20	Heat rate option settlement [\$/KW/m]	3.24
Interest rate	5%	Total investment cost [\$ Mn]	133	Fixed O&M [\$/KW]	6.4	Implied heat rate [btu/KWh]	13828

Financial Model	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13
<b>Income Statement (\$ Mn)</b>														
Energy Revenue		19	19	19	19	19	19	19	19	19	19	19	19	19
Ancillary services Revenue		0	0	0	0	0	0	0	0	0	0	0	0	0
Heat rate call option fee		13	13	13	13	13	13	13	13	13	13	13	13	13
<b>Total Revenue</b>		<b>31</b>	<b>31</b>	<b>31</b>	<b>31</b>	<b>31</b>	<b>31</b>	<b>31</b>	<b>31</b>	<b>31</b>	<b>31</b>	<b>31</b>	<b>31</b>	<b>31</b>
Fuel Cost		8	8	8	8	8	8	8	8	8	8	8	8	8
Variable O&M		0	0	0	0	0	0	0	0	0	0	0	0	0
Start-up O&M		2	2	2	2	2	2	2	2	2	2	2	2	2
Start-up fuel		0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Market procurement		0	0	0	0	0	0	0	0	0	0	0	0	0
Heat rate call option settlement		8	8	8	8	8	8	8	8	8	8	8	8	8
<b>Gross Profit</b>		<b>13</b>	<b>13</b>	<b>13</b>	<b>13</b>	<b>13</b>	<b>13</b>	<b>13</b>	<b>13</b>	<b>13</b>	<b>13</b>	<b>13</b>	<b>13</b>	<b>13</b>
Fixed O&M		1	1	1	1	1	1	1	1	1	1	1	1	1
<b>EBITDA</b>		<b>12</b>	<b>12</b>	<b>12</b>	<b>12</b>	<b>12</b>	<b>12</b>	<b>12</b>	<b>12</b>	<b>12</b>	<b>12</b>	<b>12</b>	<b>12</b>	<b>12</b>
D&A		7	7	7	7	7	7	7	7	7	7	7	7	7
<b>EBIT</b>		<b>5</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>5</b>
Interest		5	4	4	4	4	3	3	3	3	2	2	2	2
<b>EBT</b>		<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>
Taxes		0	0	0	0	1	1	1	1	1	1	1	1	1
<b>Net Income</b>		<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>
<b>Free cash flow to project</b>	<b>(133)</b>	<b>12</b>	<b>11</b>	<b>11</b>	<b>11</b>	<b>11</b>	<b>11</b>	<b>11</b>	<b>11</b>	<b>11</b>	<b>11</b>	<b>11</b>	<b>11</b>	<b>11</b>
<b>Project IRR</b>	<b>5.2%</b>													
<b>Free cash flow to equity</b>	<b>(40)</b>	<b>2</b>	<b>2</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>4</b>	<b>4</b>	<b>4</b>	<b>4</b>	<b>4</b>
<b>Equity IRR</b>	<b>5.9%</b>													
<b>DSCR min</b>	<b>1.3</b>													

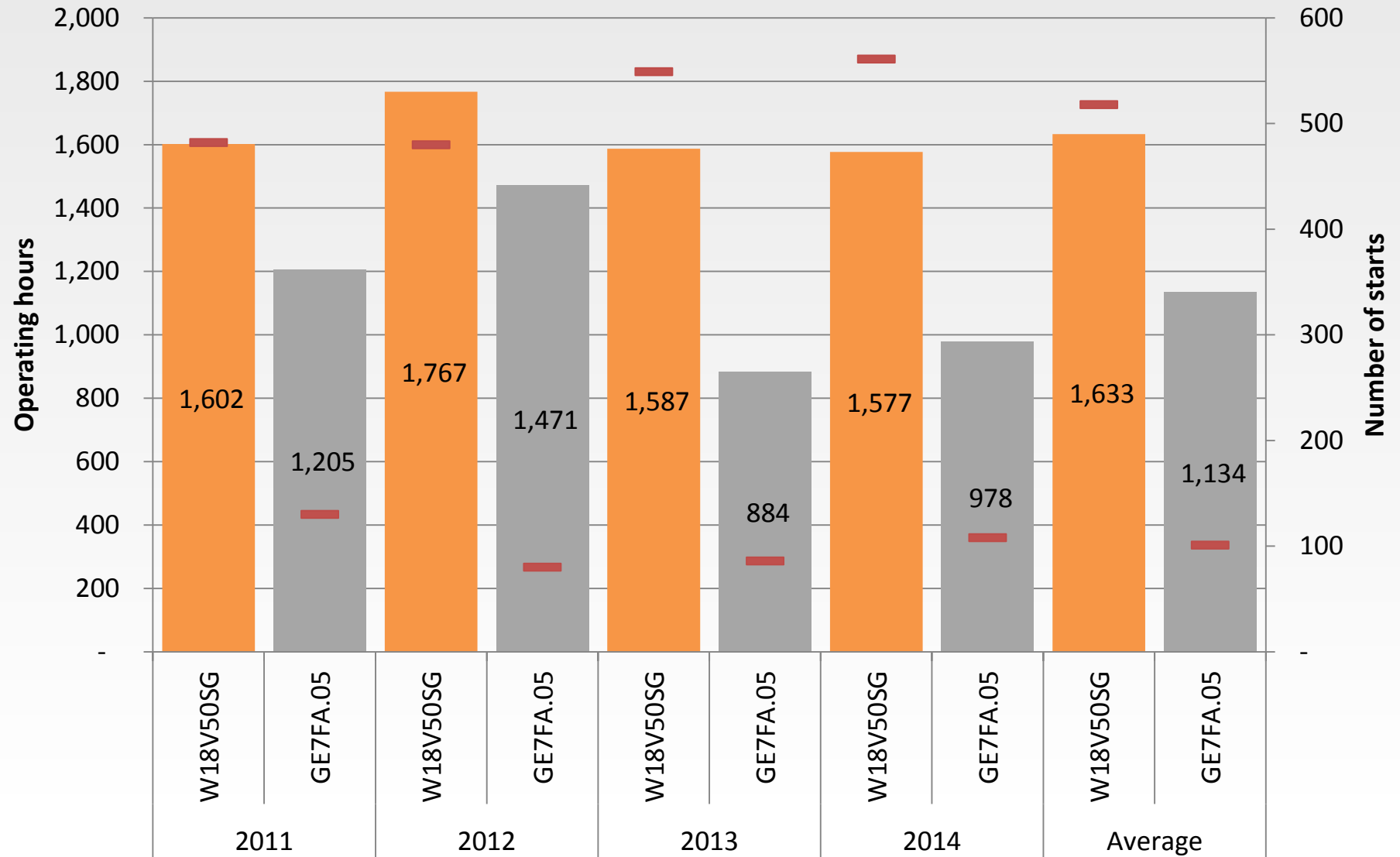
# Project feasibility – 18V50SG DAH only

ASSUMPTIONS - 18V50SG							
Capacity [MW]	221	Overnight EPC cost [\$/KW]	700	Equity share	30%	Contracted Capacity [MW]	214
Project lifetime [years]	20	Owner's cost [\$/KW]	75	Debt share	70%	Heat rate option fee [\$/KW/m]	7.45
Tax rate	37.5%	Construction period [months]	14	Loan term [years]	20	Heat rate option settlement [\$/KW/m]	5.40
Interest rate	5%	Total investment cost [\$ Mn]	175	Fixed O&M [\$/KW]	11.0	Implied heat rate [btu/KWh]	9395

Financial Model	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13
<b>Income Statement (\$ Mn)</b>														
Energy Revenue		34	34	34	34	34	34	34	34	34	34	34	34	34
Ancillary services Revenue		0	0	0	0	0	0	0	0	0	0	0	0	0
Heat rate call option fee		19	19	19	19	19	19	19	19	19	19	19	19	19
<b>Total Revenue</b>		<b>53</b>	<b>53</b>	<b>53</b>	<b>53</b>	<b>53</b>	<b>53</b>	<b>53</b>	<b>53</b>	<b>53</b>	<b>53</b>	<b>53</b>	<b>53</b>	<b>53</b>
Fuel Cost		18	18	18	18	18	18	18	18	18	18	18	18	18
Variable O&M		2	2	2	2	2	2	2	2	2	2	2	2	2
Start-up O&M		0	0	0	0	0	0	0	0	0	0	0	0	0
Start-up fuel		0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Market procurement		0	0	0	0	0	0	0	0	0	0	0	0	0
Heat rate call option settlement		14	14	14	14	14	14	14	14	14	14	14	14	14
<b>Gross Profit</b>		<b>19</b>	<b>19</b>	<b>19</b>	<b>19</b>	<b>19</b>	<b>19</b>	<b>19</b>	<b>19</b>	<b>19</b>	<b>19</b>	<b>19</b>	<b>19</b>	<b>19</b>
Fixed O&M		2	2	2	2	2	2	2	2	2	2	2	2	2
<b>EBITDA</b>		<b>17</b>	<b>17</b>	<b>17</b>	<b>17</b>	<b>17</b>	<b>17</b>	<b>17</b>	<b>17</b>	<b>17</b>	<b>17</b>	<b>17</b>	<b>17</b>	<b>17</b>
D&A		9	9	9	9	9	9	9	9	9	9	9	9	9
<b>EBIT</b>		<b>8</b>	<b>8</b>	<b>8</b>	<b>8</b>	<b>8</b>	<b>8</b>	<b>8</b>	<b>8</b>	<b>8</b>	<b>8</b>	<b>8</b>	<b>8</b>	<b>8</b>
Interest		6	6	5	5	5	4	4	4	4	3	3	3	2
<b>EBT</b>		<b>2</b>	<b>2</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>4</b>	<b>4</b>	<b>4</b>	<b>4</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>6</b>
Taxes		1	1	1	1	1	1	1	2	2	2	2	2	2
<b>Net Income</b>		<b>1</b>	<b>1</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>4</b>
<b>Free cash flow to project</b>	<b>(175)</b>	<b>16</b>	<b>16</b>	<b>16</b>	<b>16</b>	<b>15</b>	<b>15</b>	<b>15</b>	<b>15</b>	<b>15</b>	<b>15</b>	<b>15</b>	<b>15</b>	<b>15</b>
<b>Project IRR</b>	<b>5.9%</b>													
<b>Free cash flow to equity</b>	<b>(52)</b>	<b>4</b>	<b>4</b>	<b>4</b>	<b>4</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>6</b>	<b>6</b>	<b>6</b>	<b>6</b>
<b>Equity IRR</b>	<b>7.7%</b>													
<b>DSCR min</b>	<b>1.3</b>													

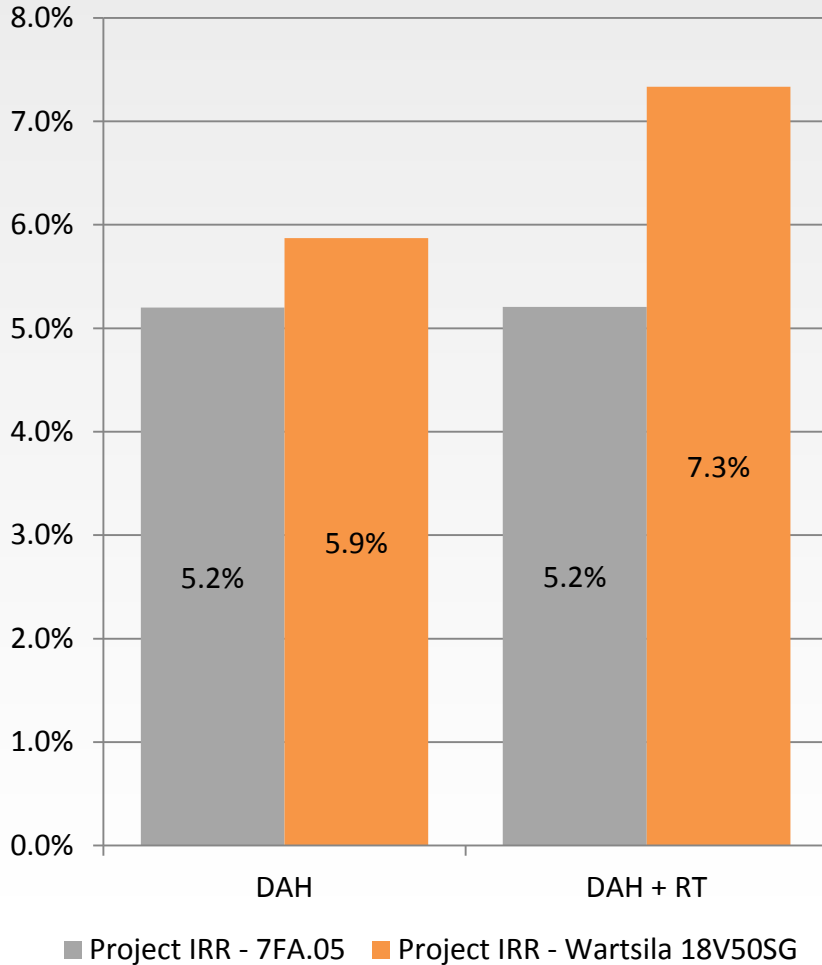
# DAH + Real Time (RT)

# Operating profiles – DAH + RT

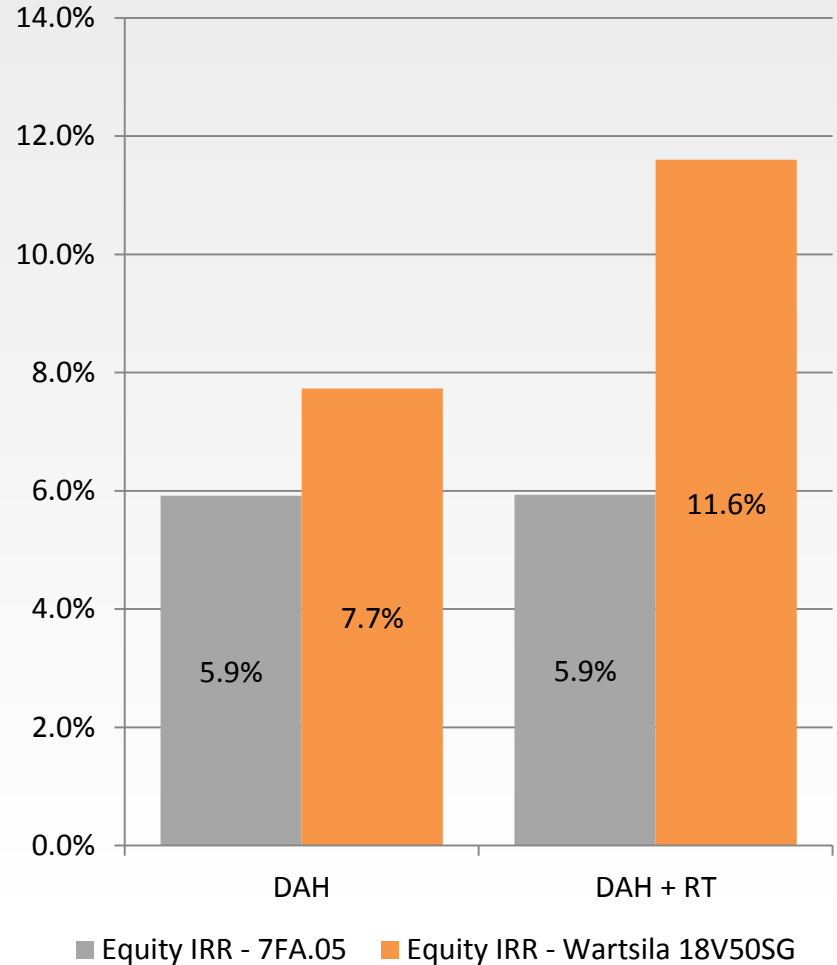


# Project economics – DAH +RT

## Project IRR



## Equity IRR



# Project feasibility – 7FA.05 DAH + RT

## ASSUMPTIONS - GE 7FA.05

Capacity [MW]	227	Overnight EPC cost [\$ /KW]	500	Equity share	30%	Contracted Capacity [MW]	197
Project lifetime [years]	20	Owner's cost [\$ /KW]	75	Debt share	70%	Heat rate option fee [\$ /KW/m]	5.29
Tax rate	37.5%	Construction period [months]	14	Loan term [years]	20	Heat rate option settlement [\$ /KW/m]	3.24
Interest rate	5%	Total investment cost [\$ Mn]	133	Fixed O&M [\$ /KW]	6.4	Implied heat rate [btu/KWh]	13828

Financial Model	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13
<b>Income Statement (\$ Mn)</b>														
Energy Revenue		19	19	19	19	19	19	19	19	19	19	19	19	19
Ancillary services Revenue		0	0	0	0	0	0	0	0	0	0	0	0	0
Heat rate call option fee		13	13	13	13	13	13	13	13	13	13	13	13	13
<b>Total Revenue</b>		<b>31</b>	<b>31</b>	<b>31</b>	<b>31</b>	<b>31</b>	<b>31</b>	<b>31</b>	<b>31</b>	<b>31</b>	<b>31</b>	<b>31</b>	<b>31</b>	<b>31</b>
Fuel Cost		9	9	9	9	9	9	9	9	9	9	9	9	9
Variable O&M		0	0	0	0	0	0	0	0	0	0	0	0	0
Start-up O&M		2	2	2	2	2	2	2	2	2	2	2	2	2
Start-up fuel		0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Market procurement		0	0	0	0	0	0	0	0	0	0	0	0	0
Heat rate call option settlement		8	8	8	8	8	8	8	8	8	8	8	8	8
<b>Gross Profit</b>		<b>13</b>	<b>13</b>	<b>13</b>	<b>13</b>	<b>13</b>	<b>13</b>	<b>13</b>	<b>13</b>	<b>13</b>	<b>13</b>	<b>13</b>	<b>13</b>	<b>13</b>
Fixed O&M		1	1	1	1	1	1	1	1	1	1	1	1	1
<b>EBITDA</b>		<b>12</b>	<b>12</b>	<b>12</b>	<b>12</b>	<b>12</b>	<b>12</b>	<b>12</b>	<b>12</b>	<b>12</b>	<b>12</b>	<b>12</b>	<b>12</b>	<b>12</b>
D&A		7	7	7	7	7	7	7	7	7	7	7	7	7
<b>EBIT</b>		<b>5</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>5</b>
Interest		5	4	4	4	4	3	3	3	3	2	2	2	2
<b>EBT</b>		<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>
Taxes		0	0	0	0	1	1	1	1	1	1	1	1	1
<b>Net Income</b>		<b>0</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>
<b>Free cash flow to project</b>	<b>(133)</b>	<b>12</b>	<b>11</b>	<b>11</b>	<b>11</b>	<b>11</b>	<b>11</b>	<b>11</b>	<b>11</b>	<b>11</b>	<b>11</b>	<b>11</b>	<b>11</b>	<b>11</b>
<b>Project IRR</b>	<b>5.2%</b>													
<b>Free cash flow to equity</b>	<b>(40)</b>	<b>2</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>4</b>	<b>4</b>	<b>4</b>	<b>4</b>	<b>4</b>
<b>Equity IRR</b>	<b>5.9%</b>													
<b>DSCR min</b>	<b>1.3</b>													

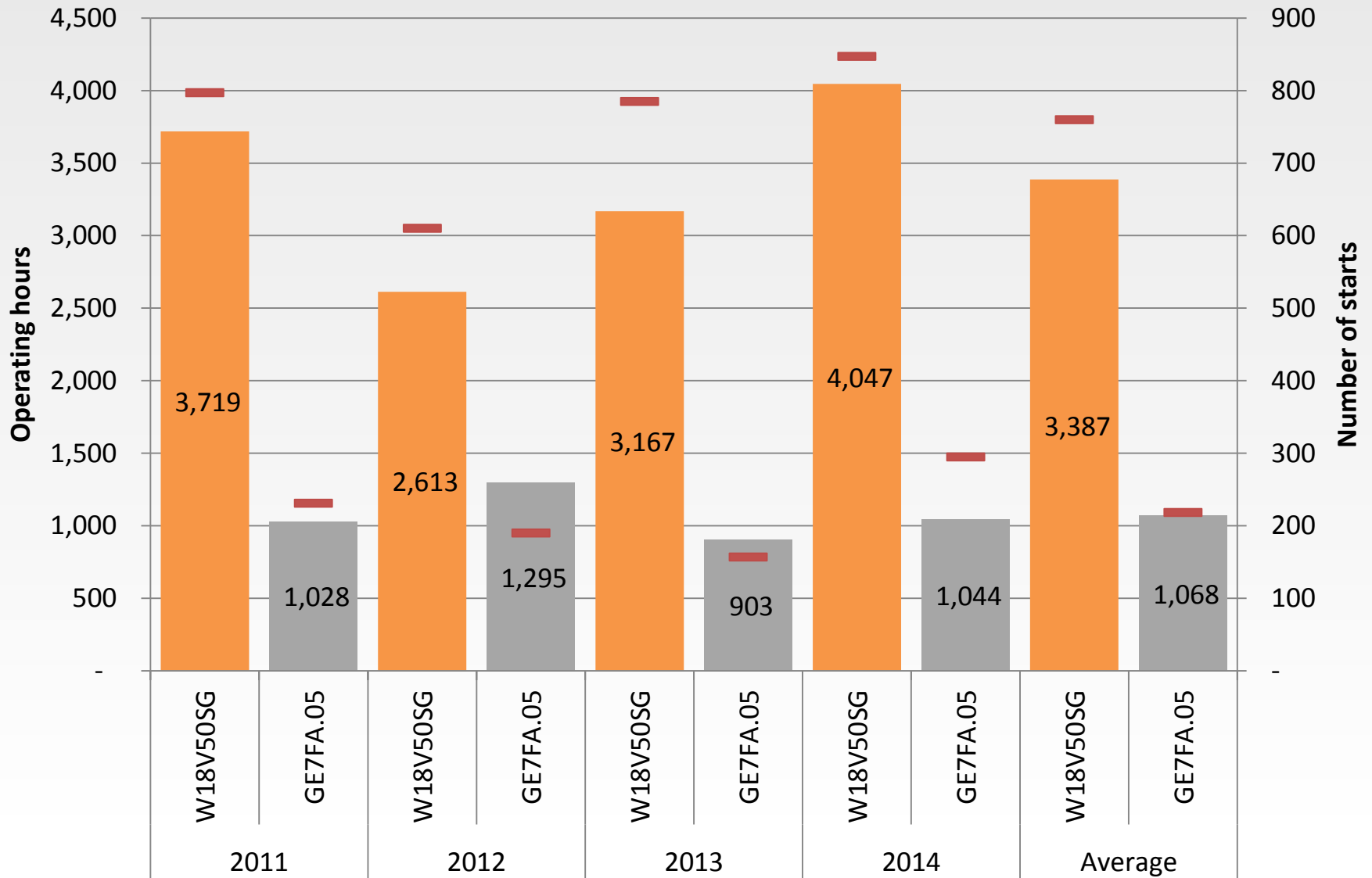


# Project feasibility – 18V50SG DAH + RT

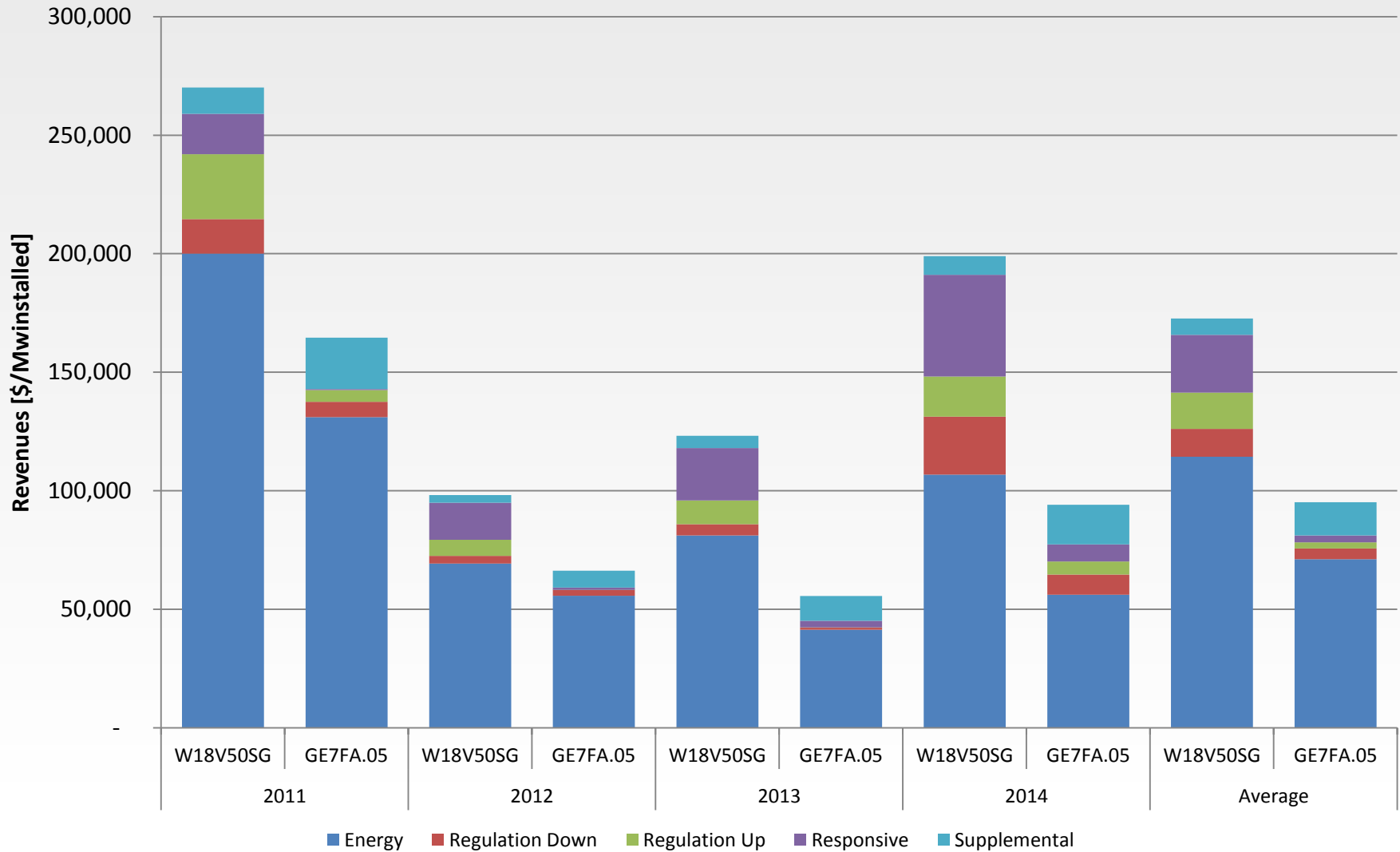
<b>ASSUMPTIONS - 18V50SG</b>														
Capacity [MW]	221	Overnight EPC cost [\$/KW]	700	Equity share	30%	Contracted Capacity [MW]	214							
Project lifetime [years]	20	Owner's cost [\$/KW]	75	Debt share	70%	Heat rate option fee [\$/KW/m]	8.27							
Tax rate	37.5%	Construction period [months]	14	Loan term [years]	20	Heat rate option settlement [\$/KW/m]	5.40							
Interest rate	5%	Total investment cost [\$ Mn]	175	Fixed O&M [\$/KW]	15	Implied heat rate [btu/KWh]	9395							
<b>Financial Model</b>	<b>Year 0</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>	<b>Year 6</b>	<b>Year 7</b>	<b>Year 8</b>	<b>Year 9</b>	<b>Year 10</b>	<b>Year 11</b>	<b>Year 12</b>	<b>Year 13</b>
<b>Income Statement (\$ Mn)</b>														
Energy Revenue		37	37	37	37	37	37	37	37	37	37	37	37	37
Ancillary services Revenue		0	0	0	0	0	0	0	0	0	0	0	0	0
Heat rate call option fee		19	19	19	19	19	19	19	19	19	19	19	19	19
<b>Total Revenue</b>		<b>56</b>	<b>56</b>	<b>56</b>	<b>56</b>	<b>56</b>	<b>56</b>	<b>56</b>	<b>56</b>	<b>56</b>	<b>56</b>	<b>56</b>	<b>56</b>	<b>56</b>
Fuel Cost		11	11	11	11	11	11	11	11	11	11	11	11	11
Variable O&M		1	1	1	1	1	1	1	1	1	1	1	1	1
Start-up O&M		0	0	0	0	0	0	0	0	0	0	0	0	0
Start-up fuel		0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Market procurement		7	7	7	7	7	7	7	7	7	7	7	7	7
Heat rate call option settlement		14	14	14	14	14	14	14	14	14	14	14	14	14
<b>Gross Profit</b>		<b>22</b>	<b>22</b>	<b>22</b>	<b>22</b>	<b>22</b>	<b>22</b>	<b>22</b>	<b>22</b>	<b>22</b>	<b>22</b>	<b>22</b>	<b>22</b>	<b>22</b>
Fixed O&M		2	2	2	2	2	2	2	2	2	2	2	2	2
<b>EBITDA</b>		<b>20</b>	<b>20</b>	<b>20</b>	<b>20</b>	<b>20</b>	<b>20</b>	<b>20</b>	<b>20</b>	<b>20</b>	<b>20</b>	<b>20</b>	<b>20</b>	<b>20</b>
D&A		9	9	9	9	9	9	9	9	9	9	9	9	9
<b>EBIT</b>		<b>11</b>	<b>11</b>	<b>11</b>	<b>11</b>	<b>11</b>	<b>11</b>	<b>11</b>	<b>11</b>	<b>11</b>	<b>11</b>	<b>11</b>	<b>11</b>	<b>11</b>
Interest		6	6	5	5	5	4	4	4	4	3	3	3	2
<b>EBT</b>		<b>5</b>	<b>5</b>	<b>5</b>	<b>6</b>	<b>6</b>	<b>6</b>	<b>7</b>	<b>7</b>	<b>7</b>	<b>8</b>	<b>8</b>	<b>8</b>	<b>9</b>
Taxes		2	2	2	2	2	2	3	3	3	3	3	3	3
<b>Net Income</b>		<b>3</b>	<b>3</b>	<b>3</b>	<b>4</b>	<b>4</b>	<b>4</b>	<b>4</b>	<b>4</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>5</b>
<b>Free cash flow to project</b>	<b>(175)</b>	<b>18</b>	<b>18</b>	<b>18</b>	<b>17</b>	<b>17</b>	<b>17</b>	<b>17</b>	<b>17</b>	<b>17</b>	<b>17</b>	<b>17</b>	<b>16</b>	<b>16</b>
<b>Project IRR</b>	<b>7.3%</b>													
<b>Free cash flow to equity</b>	<b>(52)</b>	<b>6</b>	<b>6</b>	<b>6</b>	<b>6</b>	<b>6</b>	<b>7</b>	<b>7</b>	<b>7</b>	<b>7</b>	<b>7</b>	<b>8</b>	<b>8</b>	<b>8</b>
<b>Equity IRR</b>	<b>11.6%</b>													
<b>DSCR min</b>	<b>1.5</b>													

# DAH + RT + Ancillary Services (A/S)

# Operating profiles – DAH + RT + A/S

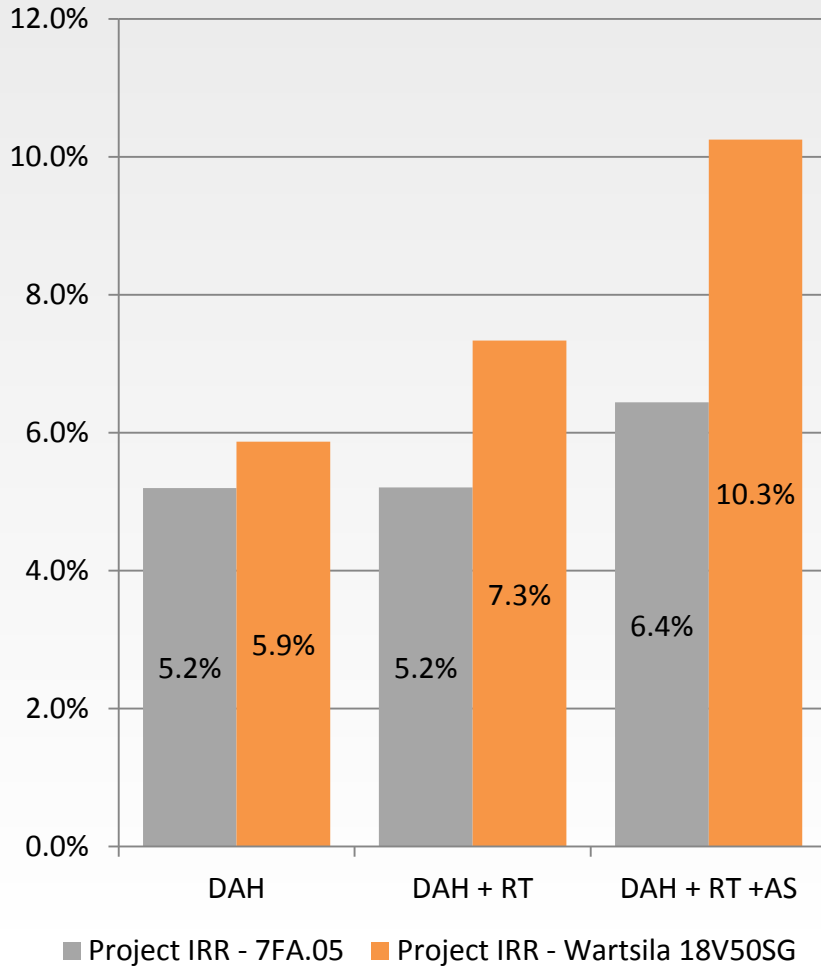


# Revenues per market product

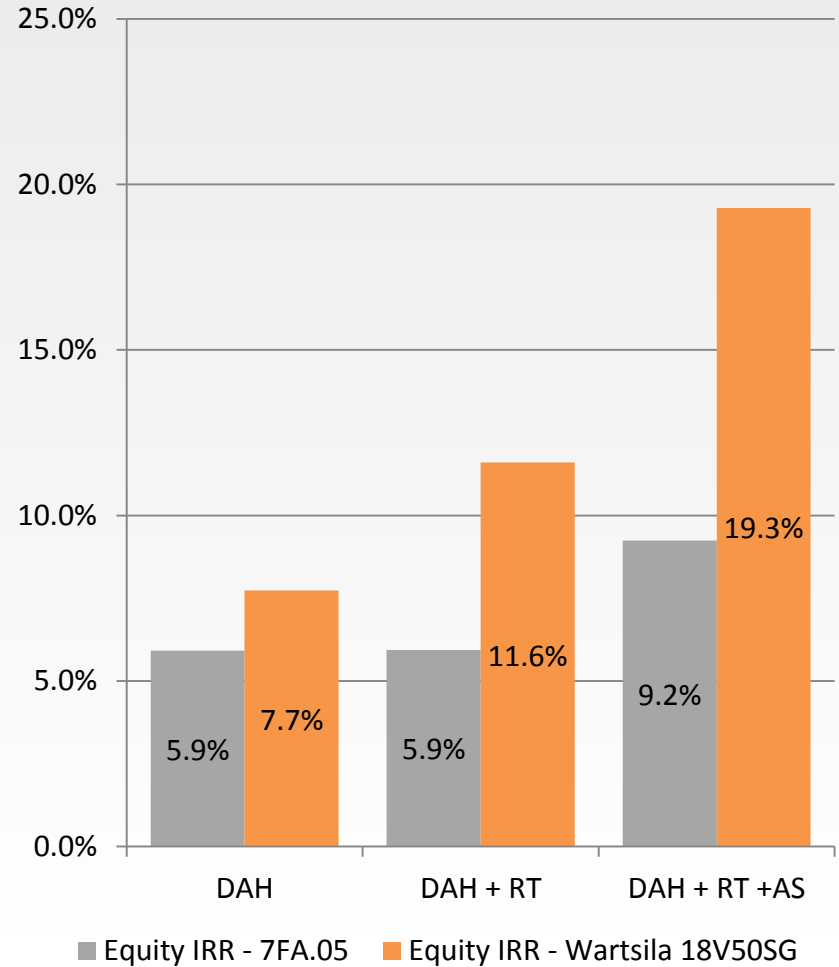


# Project economics – DAH +RT + A/S

## Project IRR



## Equity IRR



# Project feasibility – 7FA.05 DAH + RT + A/S

## ASSUMPTIONS - GE 7FA.05

Capacity [MW]	227	Overnight EPC cost [\$ /KW]	500	Equity share	30%	Contracted Capacity [MW]	197
Project lifetime [years]	20	Owner's cost [\$ /KW]	75	Debt share	70%	Heat rate option fee [\$ /KW/m]	5.29
Tax rate	37.5%	Construction period [months]	14	Loan term [years]	20	Heat rate option settlement [\$ /KW/m]	3.24
Interest rate	5%	Total investment cost [\$ Mn]	133	Fixed O&M [\$ /KW]	6.4	Implied heat rate [btu/KWh]	13828

Financial Model	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13
<b>Income Statement (\$ Mn)</b>														
Energy Revenue		16	16	16	16	16	16	16	16	16	16	16	16	16
Ancillary services Revenue		5	5	5	5	5	5	5	5	5	5	5	5	5
Heat rate call option fee		13	13	13	13	13	13	13	13	13	13	13	13	13
<b>Total Revenue</b>		<b>34</b>	<b>34</b>	<b>34</b>	<b>34</b>	<b>34</b>	<b>34</b>	<b>34</b>	<b>34</b>	<b>34</b>	<b>34</b>	<b>34</b>	<b>34</b>	<b>34</b>
Fuel Cost		8	8	8	8	8	8	8	8	8	8	8	8	8
Variable O&M		0	0	0	0	0	0	0	0	0	0	0	0	0
Start-up O&M		3	3	3	3	3	3	3	3	3	3	3	3	3
Start-up fuel		0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Market procurement		0	0	0	0	0	0	0	0	0	0	0	0	0
Heat rate call option settlement		8	8	8	8	8	8	8	8	8	8	8	8	8
<b>Gross Profit</b>		<b>15</b>	<b>15</b>	<b>15</b>	<b>15</b>	<b>15</b>	<b>15</b>	<b>15</b>	<b>15</b>	<b>15</b>	<b>15</b>	<b>15</b>	<b>15</b>	<b>15</b>
Fixed O&M		1	1	1	1	1	1	1	1	1	1	1	1	1
<b>EBITDA</b>		<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>
D&A		7	7	7	7	7	7	7	7	7	7	7	7	7
<b>EBIT</b>		<b>7</b>	<b>7</b>	<b>7</b>	<b>7</b>	<b>7</b>	<b>7</b>	<b>7</b>	<b>7</b>	<b>7</b>	<b>7</b>	<b>7</b>	<b>7</b>	<b>7</b>
Interest		5	4	4	4	4	3	3	3	3	2	2	2	2
<b>EBT</b>		<b>2</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>4</b>	<b>4</b>	<b>4</b>	<b>4</b>	<b>4</b>	<b>5</b>	<b>5</b>	<b>5</b>
Taxes		1	1	1	1	1	1	1	1	2	2	2	2	2
<b>Net Income</b>		<b>1</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>
<b>Free cash flow to project</b>	<b>(133)</b>	<b>13</b>	<b>13</b>	<b>13</b>	<b>12</b>	<b>12</b>	<b>12</b>	<b>12</b>	<b>12</b>	<b>12</b>	<b>12</b>	<b>12</b>	<b>12</b>	<b>12</b>
<b>Project IRR</b>	<b>6.4%</b>													
<b>Free cash flow to equity</b>	<b>(40)</b>	<b>3</b>	<b>4</b>	<b>4</b>	<b>4</b>	<b>4</b>	<b>4</b>	<b>4</b>	<b>4</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>5</b>
<b>Equity IRR</b>	<b>9.2%</b>													
<b>DSCR min</b>	<b>1.4</b>													

# Project feasibility – 18V50SG DAH + RT + A/S

## ASSUMPTIONS - 18V50SG

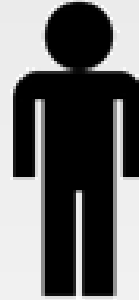
Capacity [MW]	221	Overnight EPC cost [\$/KW]	700	Equity share	30%	Contracted Capacity [MW]	214
Project lifetime [years]	20	Owner's cost [\$/KW]	75	Debt share	70%	Heat rate option fee [\$/KW/m]	8.27
Tax rate	37.5%	Construction period [months]	14	Loan term [years]	20	Heat rate option settlement [\$/KW/m]	5.40
Interest rate	5%	Total investment cost [\$ Mn]	175	Fixed O&M [\$/KW]	15	Implied heat rate [btu/KWh]	9395

Financial Model	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13
<b>Income Statement (\$ Mn)</b>														
Energy Revenue		37	37	37	37	37	37	37	37	37	37	37	37	37
Ancillary services Revenue		13	13	13	13	13	13	13	13	13	13	13	13	13
Heat rate call option fee		19	19	19	19	19	19	19	19	19	19	19	19	19
<b>Total Revenue</b>		<b>69</b>	<b>69</b>	<b>69</b>	<b>69</b>	<b>69</b>	<b>69</b>	<b>69</b>	<b>69</b>	<b>69</b>	<b>69</b>	<b>69</b>	<b>69</b>	<b>69</b>
Fuel Cost		14	14	14	14	14	14	14	14	14	14	14	14	14
Variable O&M		2	2	2	2	2	2	2	2	2	2	2	2	2
Start-up O&M		0	0	0	0	0	0	0	0	0	0	0	0	0
Start-up fuel		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Market procurement		0	0	0	0	0	0	0	0	0	0	0	0	0
Heat rate call option settlement		24	24	24	24	24	24	24	24	24	24	24	24	24
<b>Gross Profit</b>		<b>29</b>	<b>29</b>	<b>29</b>	<b>29</b>	<b>29</b>	<b>29</b>	<b>29</b>	<b>29</b>	<b>29</b>	<b>29</b>	<b>29</b>	<b>29</b>	<b>29</b>
Fixed O&M		2	2	2	2	2	2	2	2	2	2	2	2	2
<b>EBITDA</b>		<b>26</b>	<b>26</b>	<b>26</b>	<b>26</b>	<b>26</b>	<b>26</b>	<b>26</b>	<b>26</b>	<b>26</b>	<b>26</b>	<b>26</b>	<b>26</b>	<b>26</b>
D&A		9	9	9	9	9	9	9	9	9	9	9	9	9
<b>EBIT</b>		<b>18</b>	<b>18</b>	<b>18</b>	<b>18</b>	<b>18</b>	<b>18</b>	<b>18</b>	<b>18</b>	<b>18</b>	<b>18</b>	<b>18</b>	<b>18</b>	<b>18</b>
Interest		6	6	5	5	5	4	4	4	4	3	3	3	2
<b>EBT</b>		<b>12</b>	<b>12</b>	<b>12</b>	<b>13</b>	<b>13</b>	<b>13</b>	<b>13</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>15</b>	<b>15</b>	<b>15</b>
Taxes		4	4	5	5	5	5	5	5	5	5	6	6	6
<b>Net Income</b>		<b>7</b>	<b>7</b>	<b>8</b>	<b>8</b>	<b>8</b>	<b>8</b>	<b>8</b>	<b>9</b>	<b>9</b>	<b>9</b>	<b>9</b>	<b>9</b>	<b>10</b>
<b>Free cash flow to project</b>	<b>(175)</b>	<b>22</b>	<b>22</b>	<b>22</b>	<b>22</b>	<b>22</b>	<b>21</b>	<b>21</b>	<b>21</b>	<b>21</b>	<b>21</b>	<b>21</b>	<b>21</b>	<b>21</b>
<b>Project IRR</b>	<b>10.5%</b>													
<b>Free cash flow to equity</b>	<b>(52)</b>	<b>10</b>	<b>10</b>	<b>10</b>	<b>10</b>	<b>11</b>	<b>11</b>	<b>11</b>	<b>11</b>	<b>11</b>	<b>12</b>	<b>12</b>	<b>12</b>	<b>12</b>
<b>Equity IRR</b>	<b>19.9%</b>													
<b>DSCR min</b>	<b>1.8</b>													

# IPP business case with gas turbines in ERCOT?



Contract



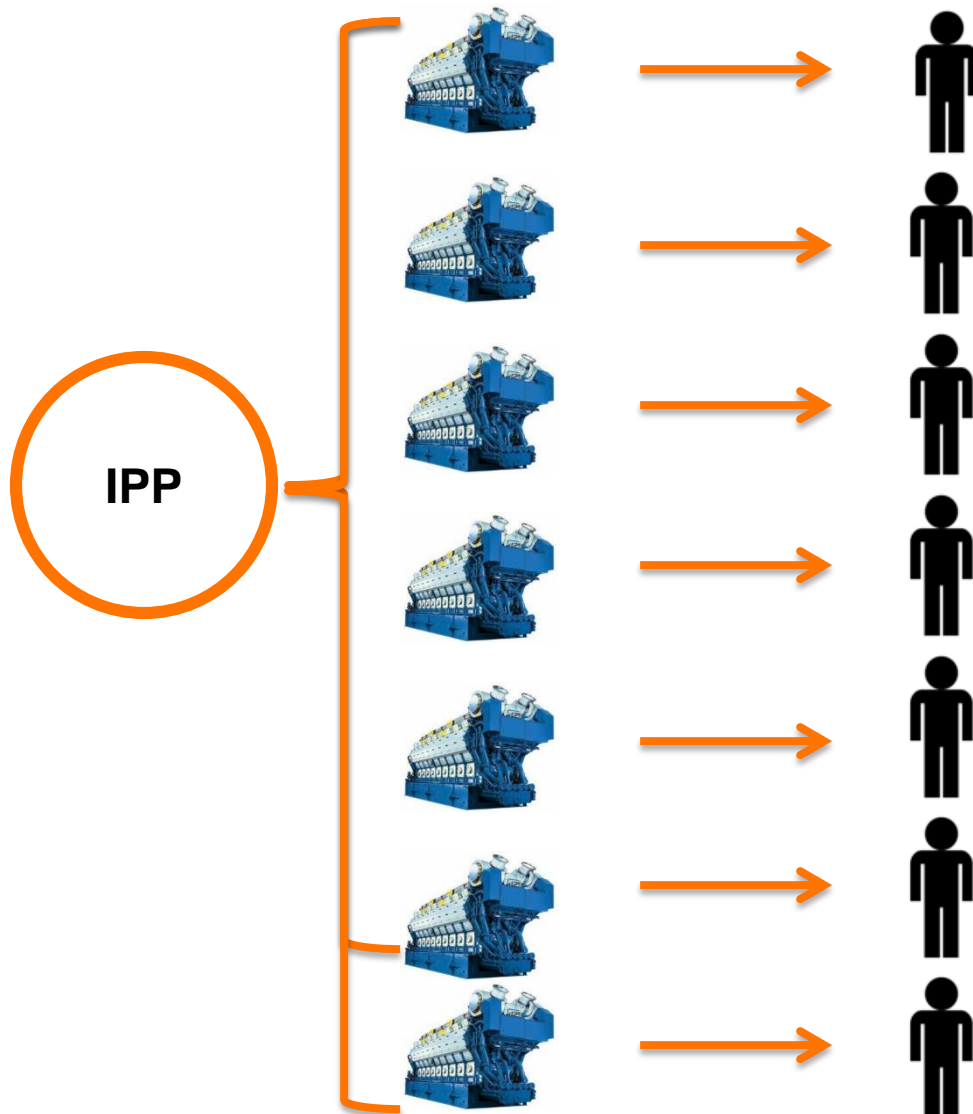
- Develop multiple GT project to lower the development cost and investment cost on \$/KW basis

- Contract at least 50% of the capacity to ensure financing for the project
- 200 MW blocks of day ahead call options
- One offtaker per turbine

- Own generation at 200 MW scale
- Other IPPs with the same value proposition
- Financial contracts



# IPP business case with gas engines in ERCOT



- Develop a six engine project and sell 20 MW contract blocks to several offtakers
  - EPC capex 700 \$/KW
- Competition against own generation at 20 MW scale or financial contracts
- More valuable call option than typical market products
- Wider customer base
- Plant extension by increasing customer base

THANK YOU



WÄRTSILÄ