

# EFFORT – Recovering Wasted Heat

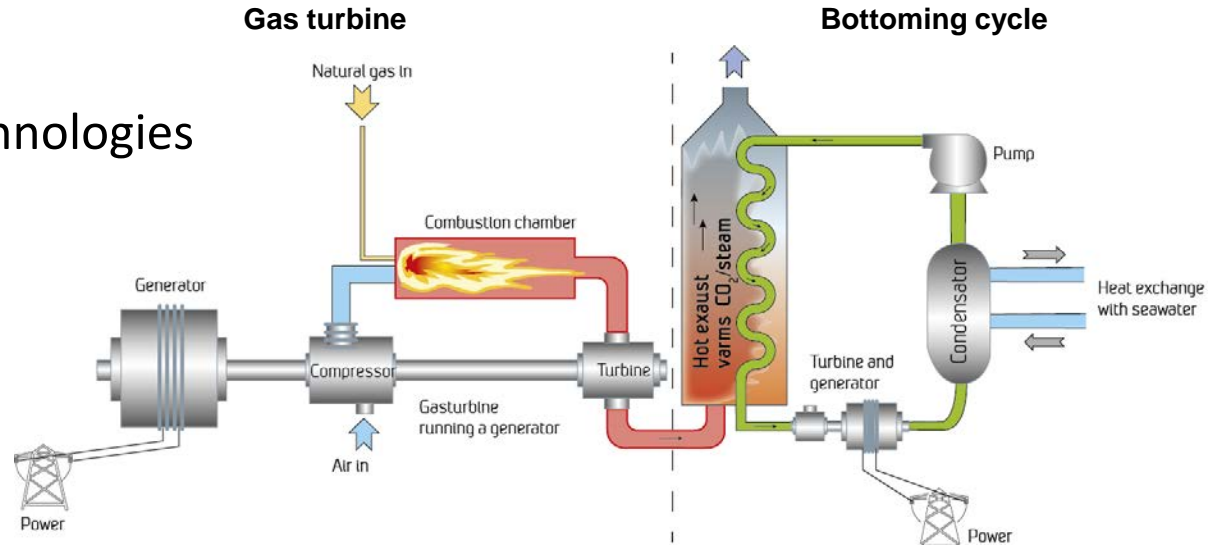
## Challenges:

- Energy intensive operations
  - High fuel costs
  - CO<sub>2</sub> emissions
- Low efficiency gas turbines
- Climate change

Photo: Kristin Hommedal- Statoil

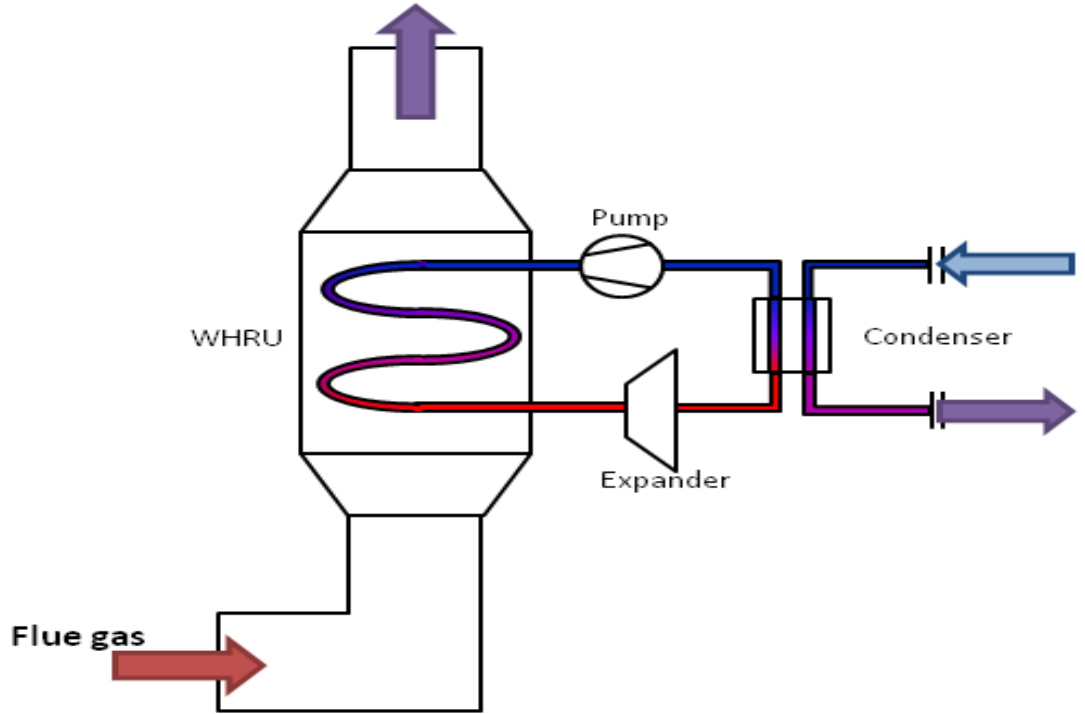
# EFFORT Goals

- Develop Energy efficient technologies
- Promote implementation
- Reduce
  - Energy consumption
  - CO<sub>2</sub> emissions



# Bottoming Cycle

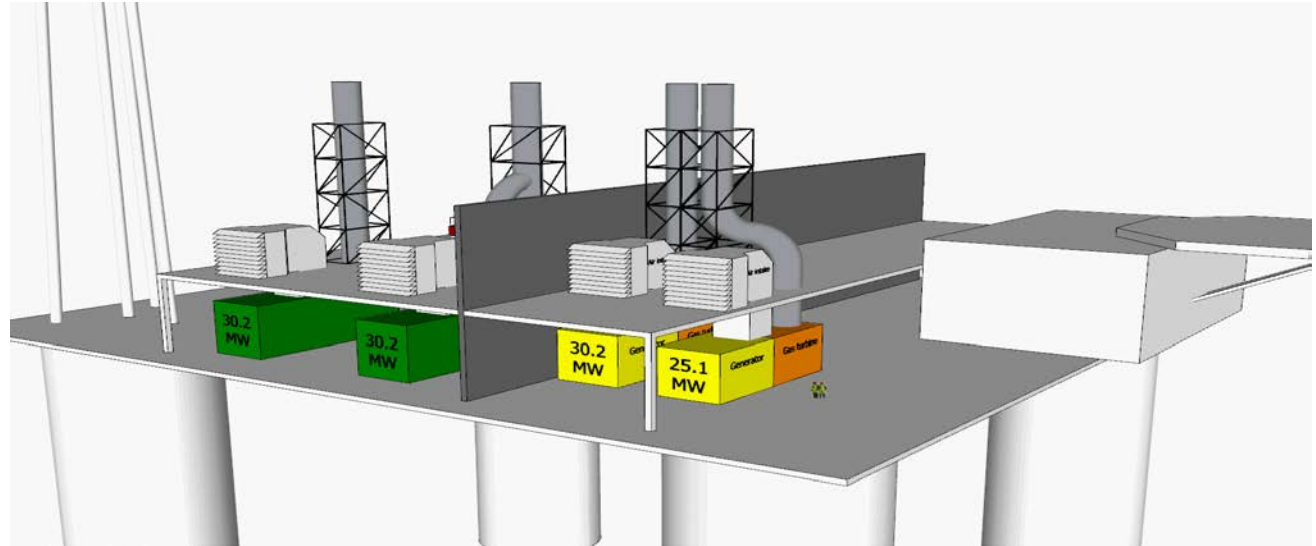
- GT nominal power:  
32MW
- Combined cycle:  
42 MW
- Increase in  
plant efficiency:  
38.6 -> 50.0%



# Case Study: Oil/Gas Platform on NCS

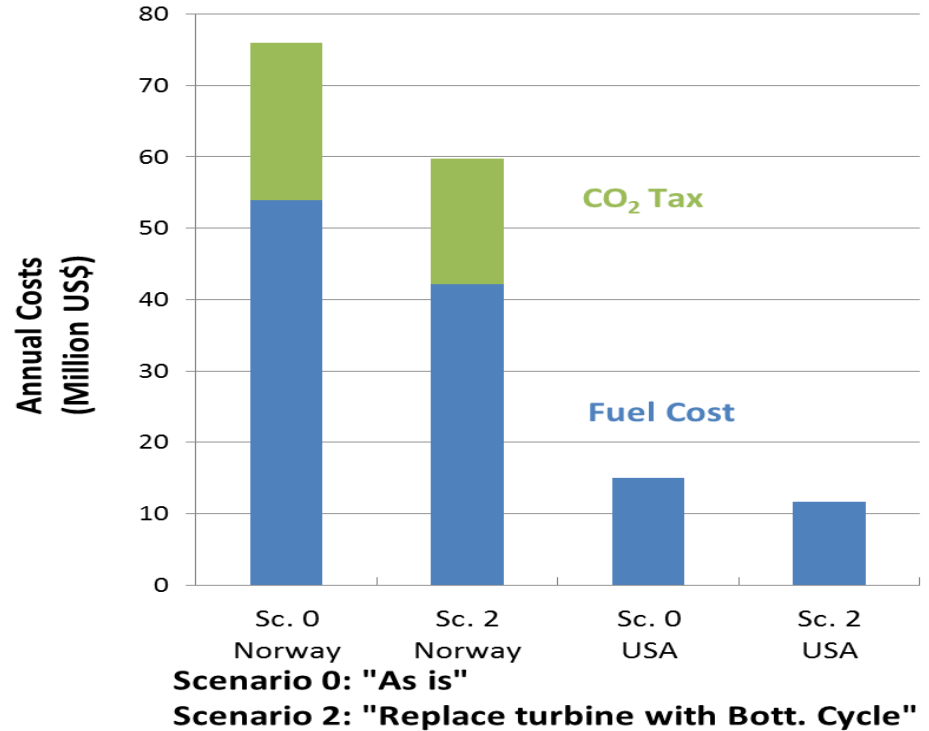
## Replace 4<sup>th</sup> Turbine with Bottoming Cycle

- 22% Less fuel
- 63000 tonnes less CO<sub>2</sub>



# Cost Savings

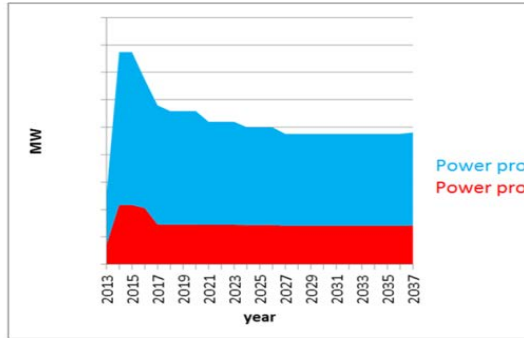
- US\$ 17 M Annual Savings in CO<sub>2</sub> tax and Fuel cost on NCS
- Pay-back time 4-6 years



# Case Study: PETROBRAS FPSO

## Adding Steam Bottoming Cycle

- 25 % less fuel consumption





# Value for industry

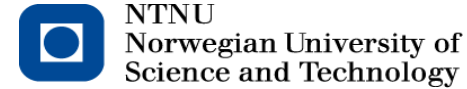
- 25 % less
  - fuel cost
  - CO<sub>2</sub> emissions
- Increase GT Efficiency
- Allow expansion into more environmentally sensitive areas:
  - the Arctic



Photo: Harald Pettersen - Statoil



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**Funded by:**  
The Research Council of Norway

