

# **Final Presentation**

**Energy Target Setting**

# Presentation Steps

A detailed technical line drawing of an industrial facility, likely a refinery or chemical plant, serves as the background. It shows a complex network of pipes, storage tanks, distillation columns, and structural steel frameworks. The drawing is rendered in a light gray color, allowing the foreground text boxes to stand out. The overall style is that of a professional engineering or architectural blueprint.

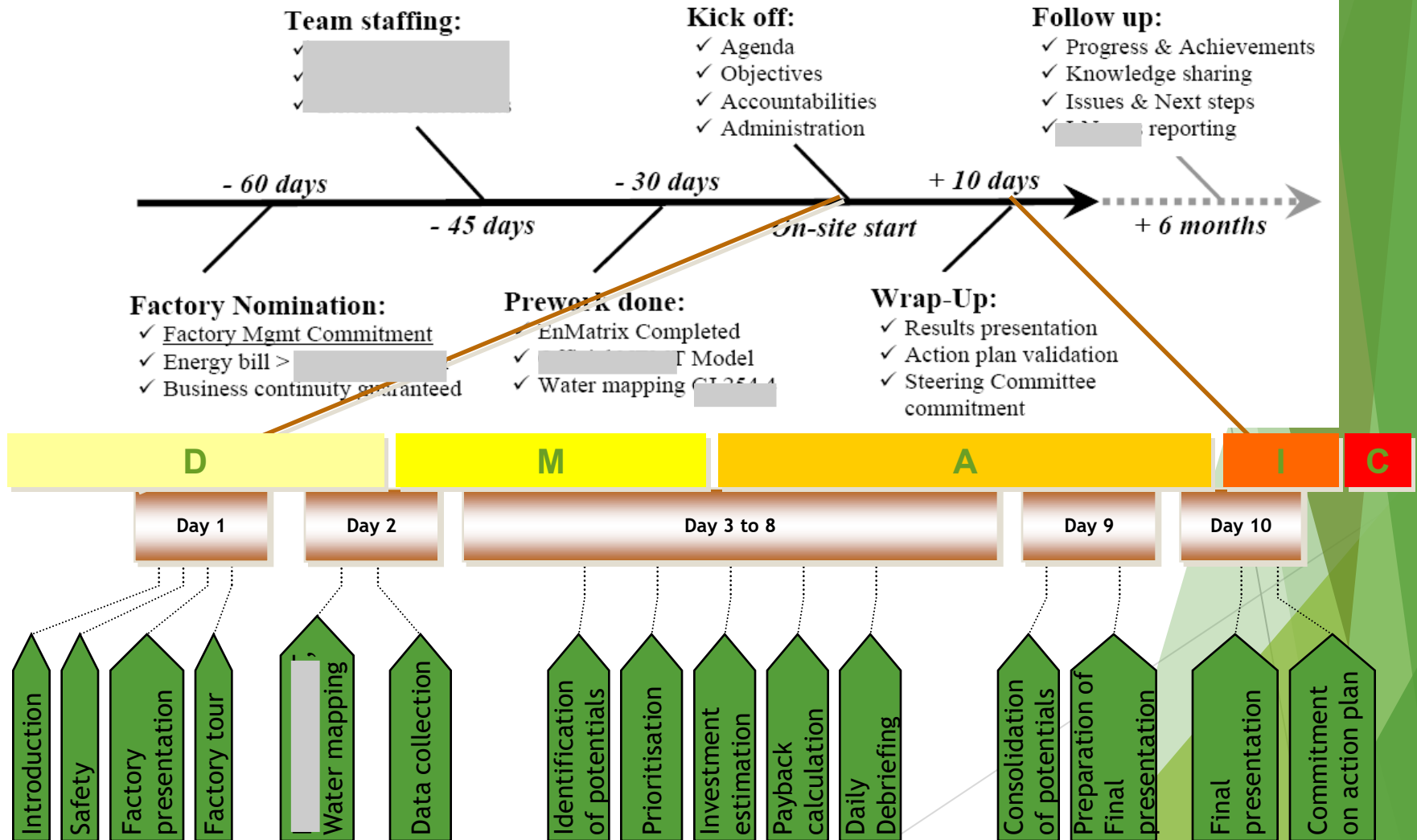
**ETS Methodology**

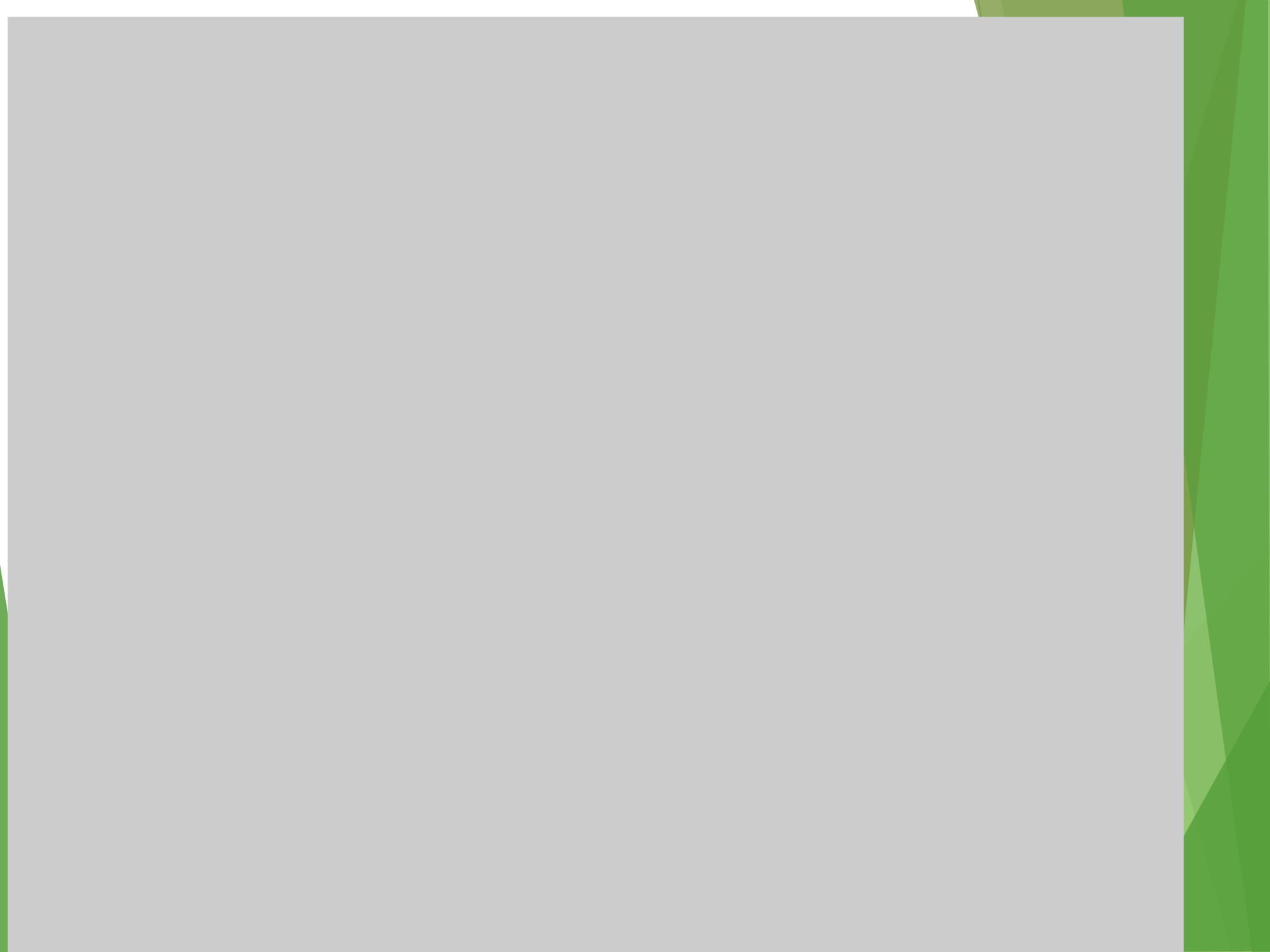
**Key Figures**

**Saving potentials**

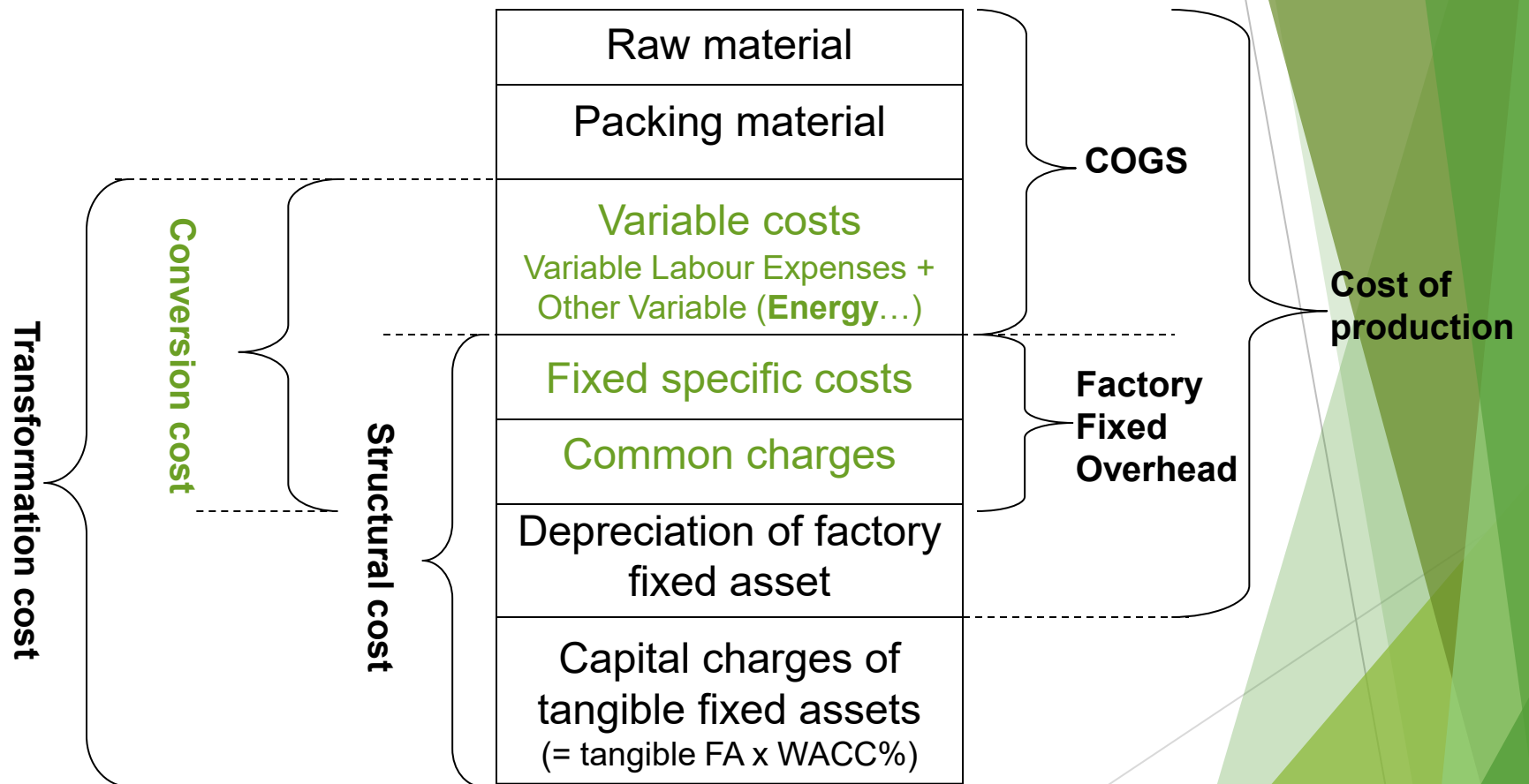
# Methodology

## How does it work and conditions for eligibility?

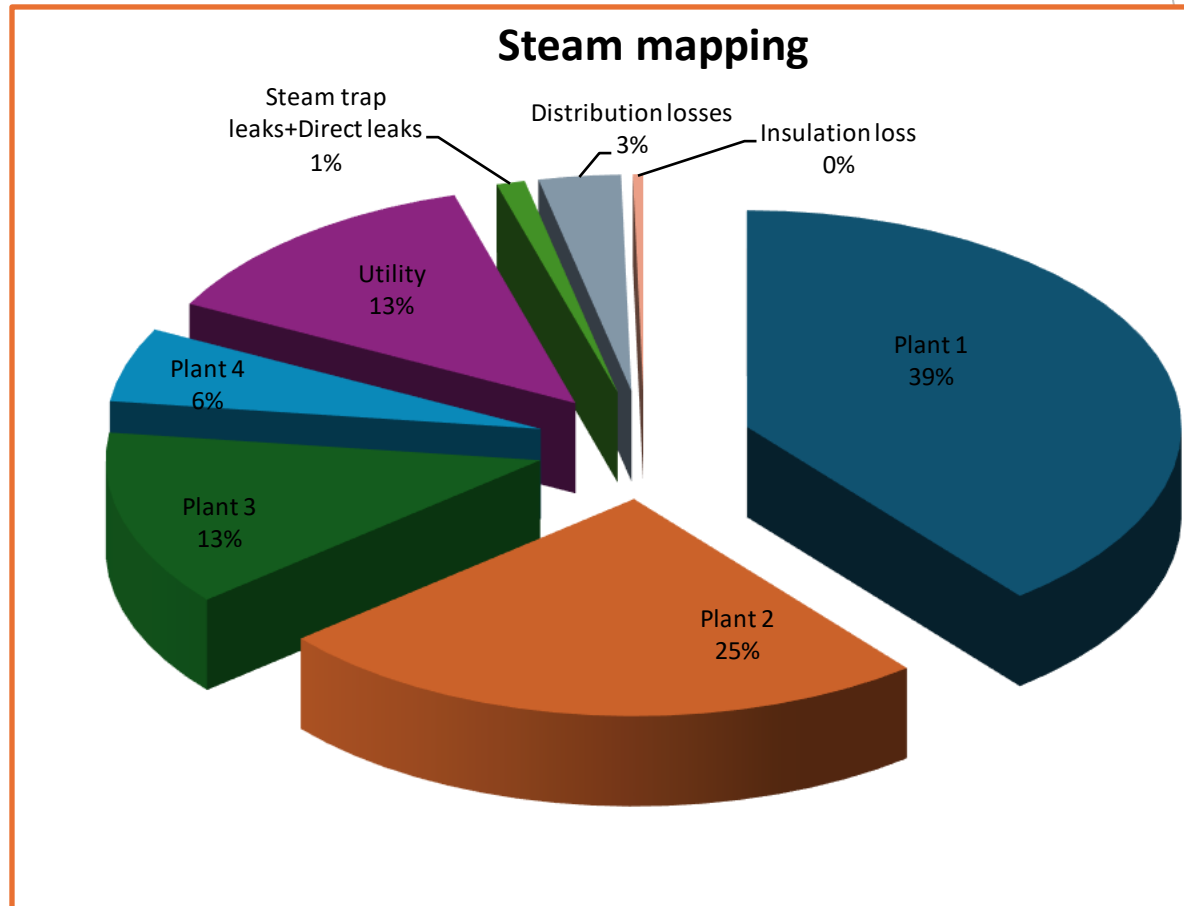




# Cost structure and definitions



# Steam Pie-chart



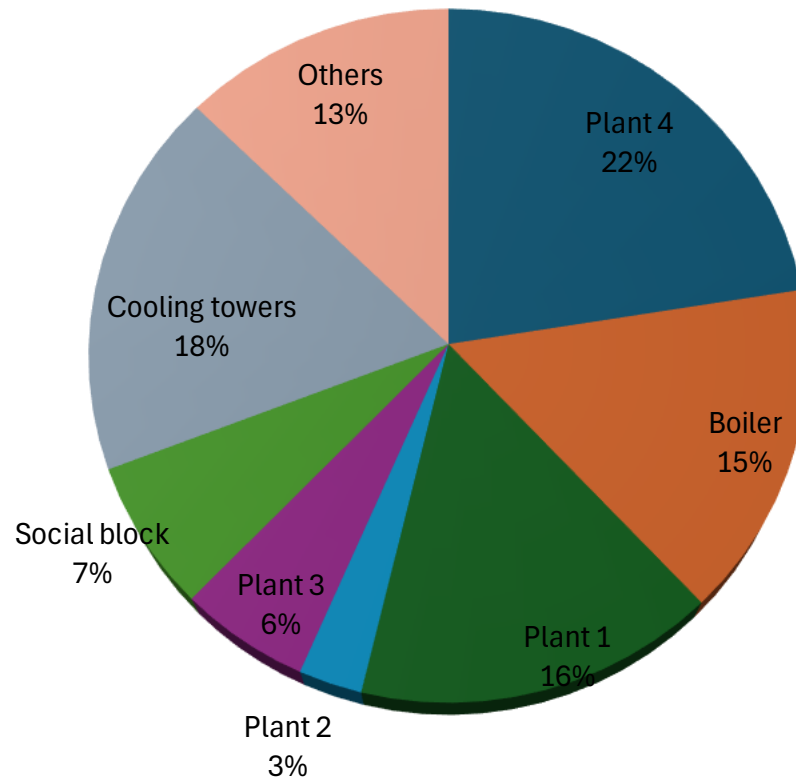
Total steam generation,



**60846**

MT/annum

# Water Piechart



**Water Usage : 323,874 m3**

# Cost savings calculations

## Basis

*All the savings presented hereafter are calculated using the following marginal costs\*.*

### Utilities Cost Baseline

#### Water

|                       | Unit Cost | Unit  | RM/GJ |
|-----------------------|-----------|-------|-------|
| Townwater             | 1.71      | RM/m3 |       |
| Softwater             | 2.95      | RM/m3 |       |
| Process Cooling Water | 0.13      | RM/m3 | 2.09  |
| Chilled Water 5°C     | 0.61      | RM/m3 | 28.09 |
| Chilled Water 2°C     | 0.49      | RM/m3 | 36.05 |
| Chilled Water 10 °C   | 1.00      | RM/m3 | 35.44 |
| Chilled Water CPW     | 0.39      | RM/m3 | 39.25 |
| Waste Water           | 2.79      | RM/m3 |       |

#### Fuel

|        |        |          |
|--------|--------|----------|
| Diesel | 1.9685 | RM/litre |
| LFO    | 2.038  | RM/litre |
| LPG    | 2.8    | RM/kg    |

#### Utilities

|                |        |        |
|----------------|--------|--------|
| Steam          | 210.78 | RM/Mt  |
| Compressed Air | 0.051  | RM/m3  |
| Hot Air        |        | RM/m3  |
| Electricity    | 0.357  | RM/Kwh |

### Utilities Cost Baseline

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| Waste Water           | 2.79      | RM/m3 |       |

#### Fuel

|        |      |          |
|--------|------|----------|
| Diesel | 1.85 | RM/litre |
| LFO    | 1.32 | RM/litre |
| LPG    | 2.80 | RM/kg    |
| CNG    | 1.33 | RM/Sm3   |
| NG     | 0.72 | RM/Sm3   |

#### Utilities

|                |        |        |
|----------------|--------|--------|
| Steam (LFO)    | 127.18 | RM/Mt  |
| Steam (CNG)    | 124.59 | RM/Mt  |
| Steam (NG)     | 72.31  | RM/Mt  |
| Compressed Air | 0.051  | RM/m3  |
| Hot Air        |        | RM/m3  |
| Electricity    | 0.357  | RM/Kwh |

Jul-15  
2016

# Summary of Energy Savings Projects

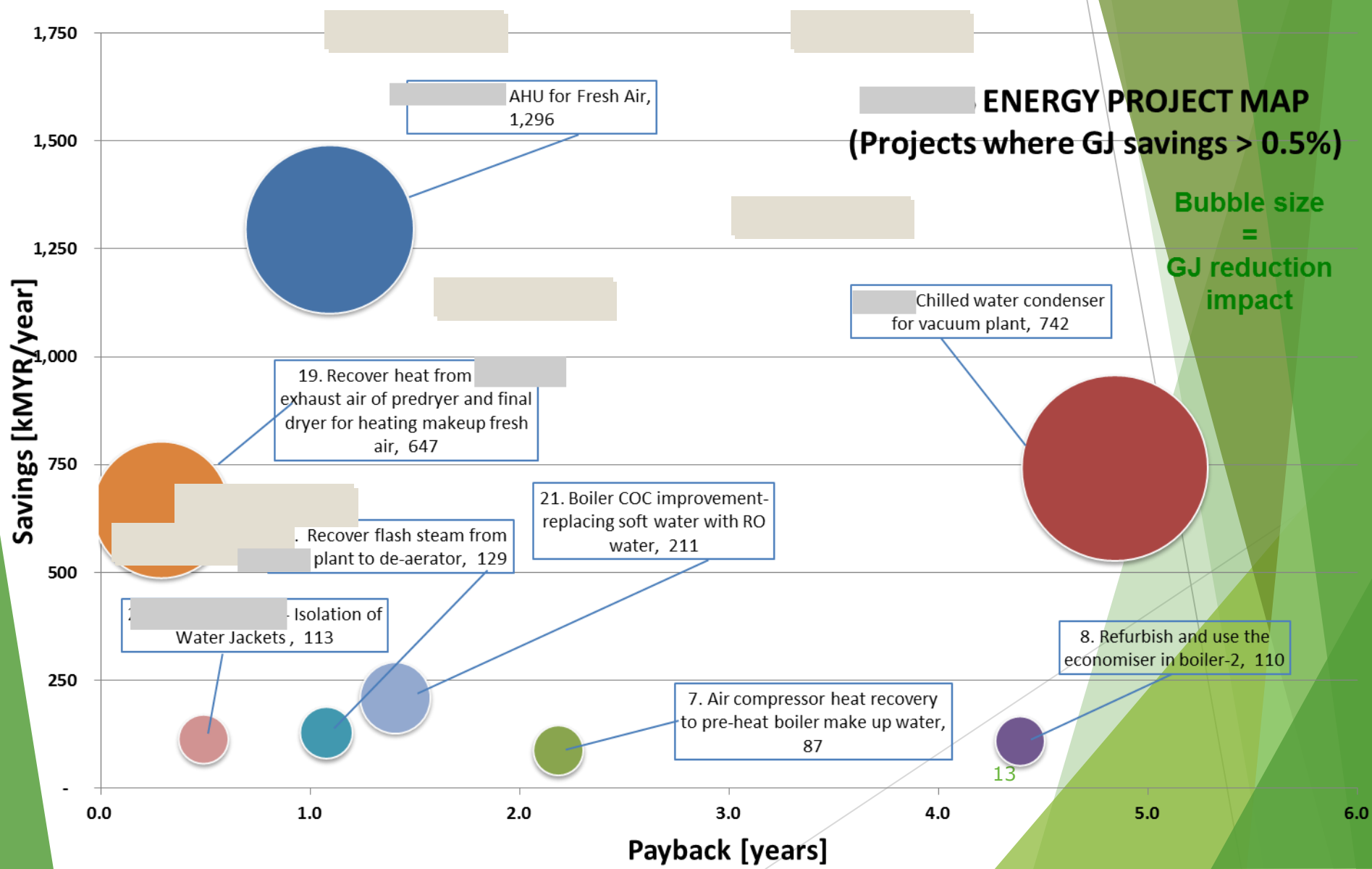
Total Number of Projects Identified - 30

Energy – 26

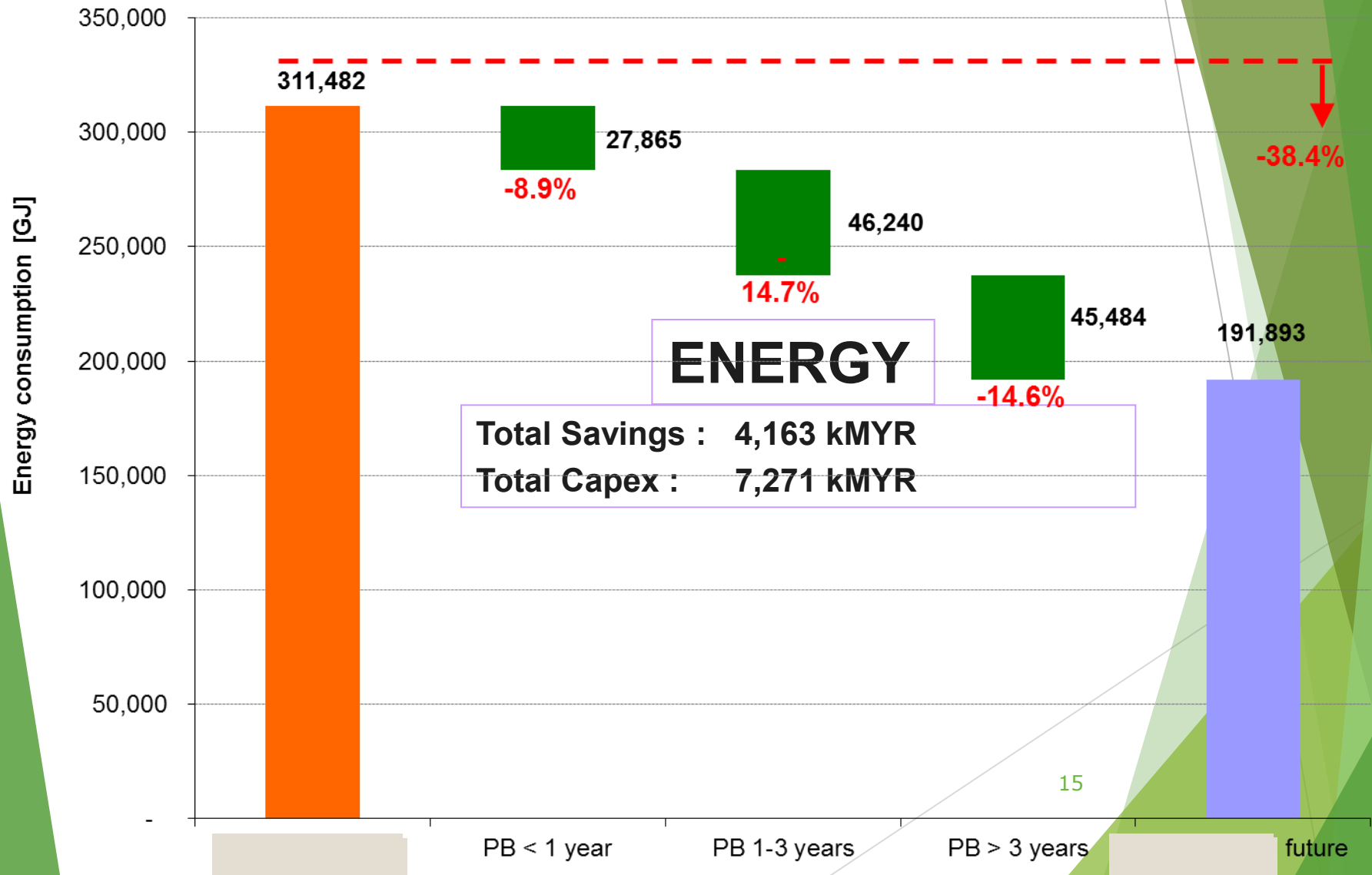
Water -4

| Projects          | Numbers | Savings (kMYR) | % Savings (GJ) | % Savings (m3) | Investment ( kMYR) |
|-------------------|---------|----------------|----------------|----------------|--------------------|
| >0.5 % GJ Savings | 8       | 3,334          | 34.3           | 16.0           | 5,736              |
| <0.5% GJ Savings  | 22      | 723            | 4.1            | 30.3           | 1,535              |
| Total             | 30      | 4,163          | 38.4           | 46.3           | 7,271              |

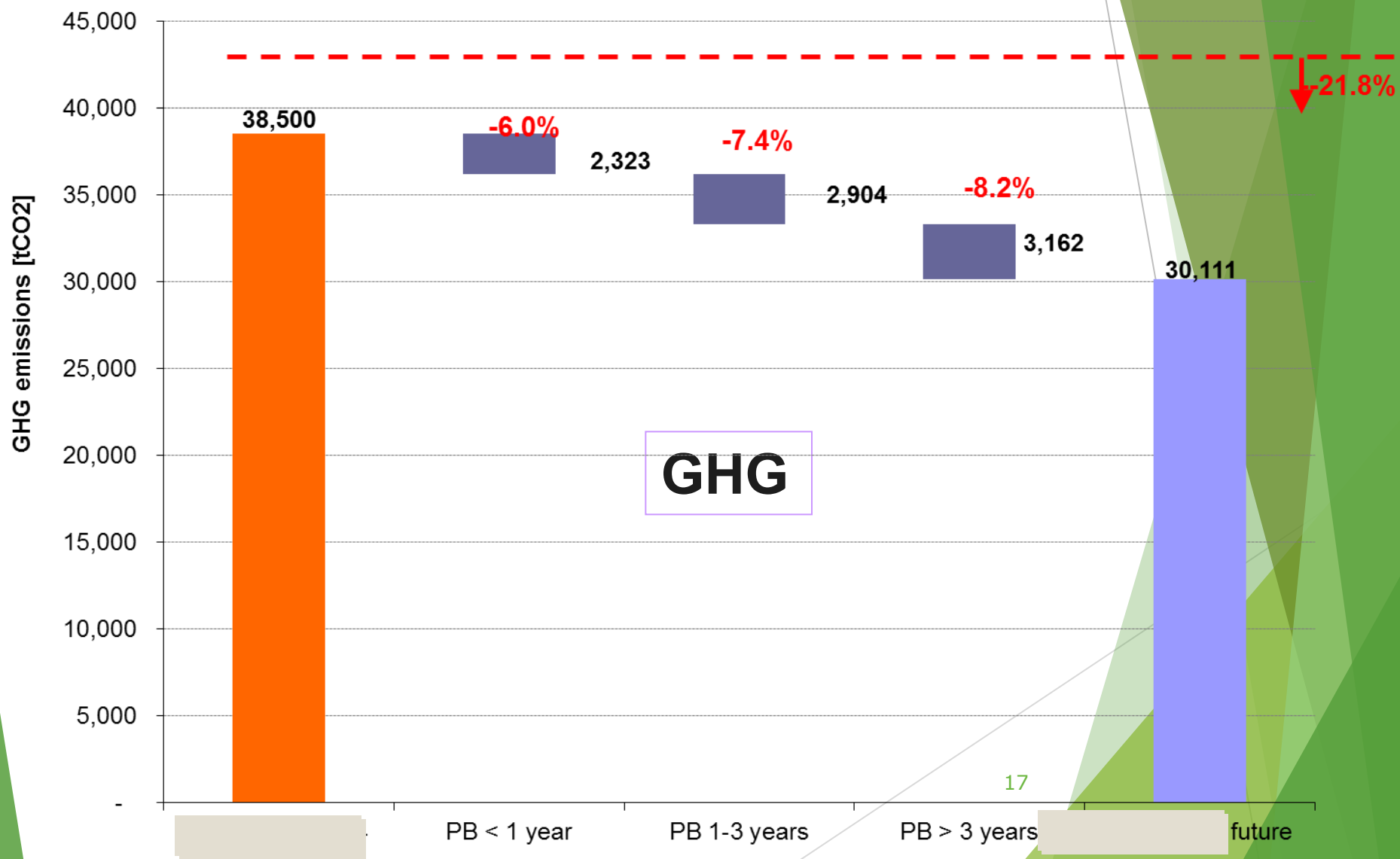
# Energy savings bubble chart



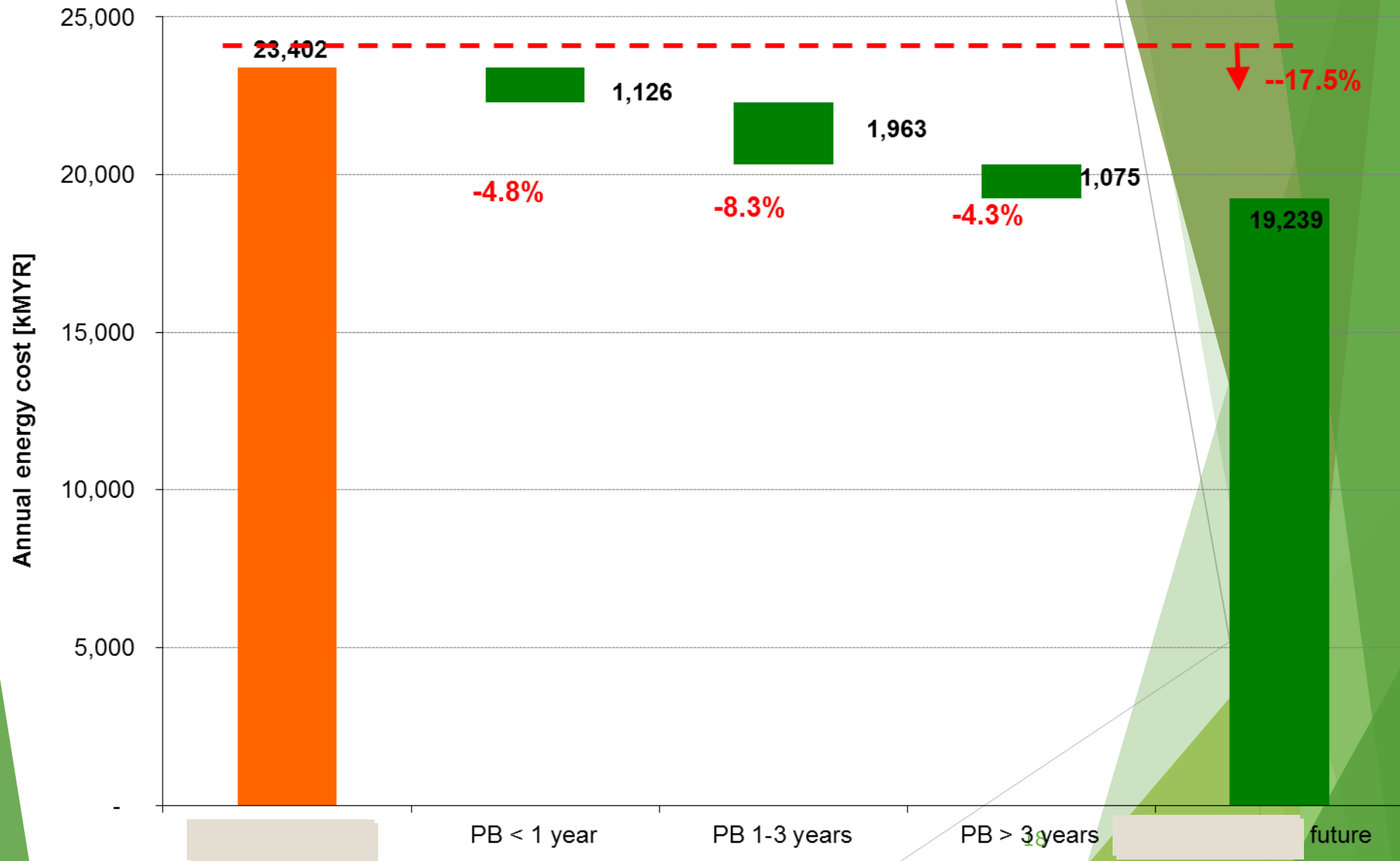
The proposed projects can reduce the energy consumption by 38%.



## ...GHG emission by 21%



## ... and the energy bill by 17%





# THE ENERGETIC ETS/WTS TEAM

