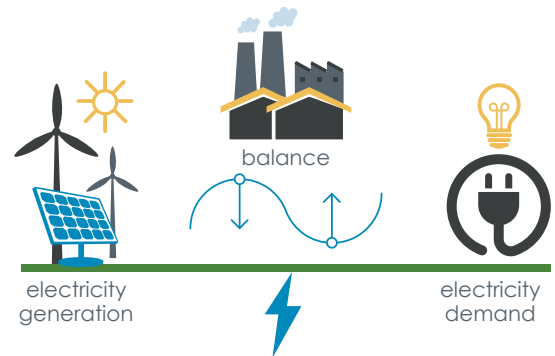


## CASE WATCH 12 : DEMAND SIDE RESPONSE

Optimise electricity sourcing and use via demand-response (flexibility) in industry clusters.

Reduce and balance industrial power demand by joining a virtual power plant.



### BALANCING THE GRID

#### KEY INSIGHTS

- optimise power use
- secure power supply
- integrate sites & clusters
- enable renewable energy

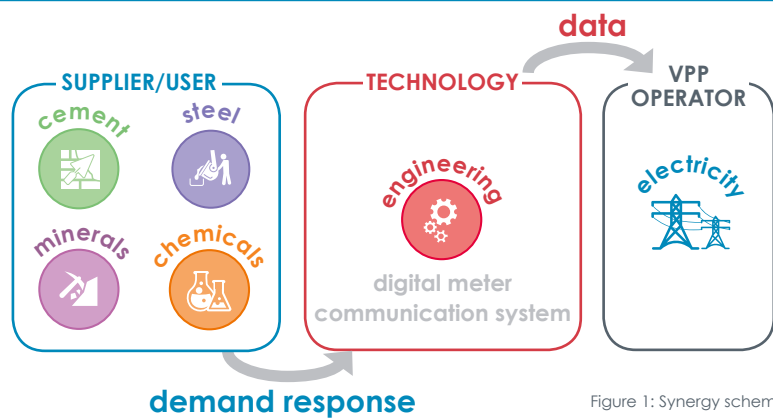


Figure 1: Synergy scheme <sup>1</sup>

### CROSS-SECTOR COLLABORATION

Process industries have a realistic potential to provide flexibility to the grid.

Electricity-intensive industries have a growing demand for security of power supply.

#### Electricity use per sector

##### 100-150 kWh/ton mineral

Flexibility: 10-30% (crushing and grinding)

##### 80-100 kWh/ton crude oil

Flexibility: 30-45% (cooling tower, pumping unit, oil separation)

##### 120-130 kWh/ton cement

Flexibility: 20-30% (crushing and grinding raw materials)

##### 300-700 kWh/ton steel

Flexibility: 15-30% (electric arc furnace steelmaking)

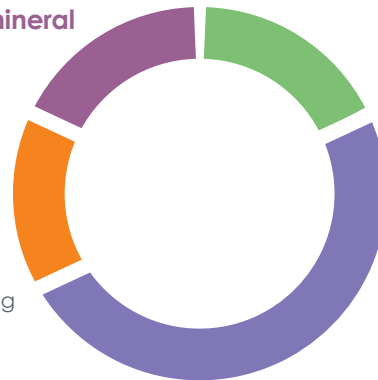


Figure 2: Cross-sector potential <sup>1,2,3,4,5,6,7,8</sup>

### SUSTAINABILITY IMPACT

#### Wins for industry

- > for suppliers: reduction of power instability<sup>9,11</sup>
- > for industry: 5-10% electricity cost savings<sup>1,10</sup>

#### Environmental gains

- > renewable energy enabled: 10-45% lower peak power demand<sup>1,9,10</sup>

#### Wins for society

- > security of power supply (blackout avoidance)<sup>9</sup>
- > improved business relations in regional clusters
- > job creation and new skills development<sup>1</sup>

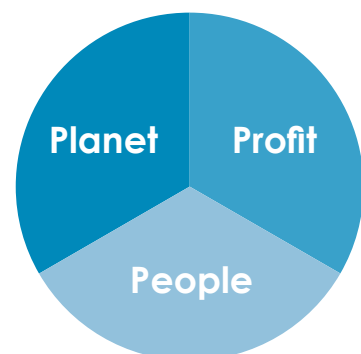


Figure 3: Sustainability <sup>1</sup>

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