

# Wind Power



Windpower is only as reliable as the wind. Thus there is an inherent need for other power plants which can be switched on or off depending on whether the wind blows.

**Uncontrollable**



**800 MEUR per brick.**



# Wind Power



**Capacity Card 1**

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# Wind Power



**Capacity Card 1**

# Coal Power



Coal is the cheapest but least environmental friendly energy technology. Coal is distributed fairly evenly around the world. Therefore, security of supply is basically not an issue.

**FLEXIBLE**



**800 MEUR per brick**

**INFLEXIBLE**



**500 MEUR per brick.**



## Coal Power



**Capacity Card 2**



# Coal Power



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**Capacity Card 2**

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## Coal Power



**Capacity Card 2**

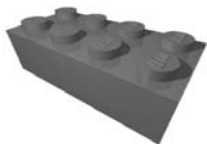


## Coal Power with CCS



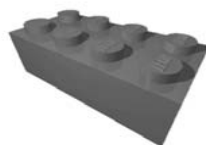
Carbon Capture & Storage (CCS) can reduce 90% of the CO<sub>2</sub> emissions from coal power. However, additional fuel is needed to capture the CO<sub>2</sub>.

**FLEXIBLE**



**900 MEUR per brick**

**INFLEXIBLE**



**600 MEUR per brick.**

**NB! CCS coal is shown as carbon neutral in CtG**



## Coal power with CCS



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*the global coalition for a clean, prosperous and secure energy future*

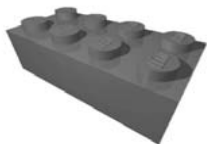
**Capacity Card 3**

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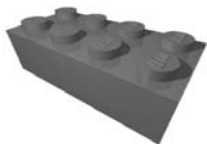


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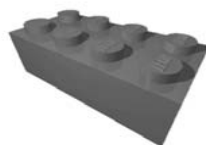
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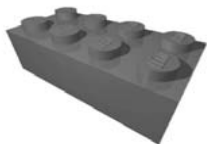
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## Coal power with CCS



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**Capacity Card 3**



# Oil Power



Oil fired power plants are quite flexible and relatively inexpensive to construct. However, oil produces significant pollution and often bring about security issues.

**FLEXIBLE**



**1400 MEUR per brick**

**INFLEXIBLE**



**1200 MEUR per brick.**



# Oil Power



**Capacity Card 4**

# Oil Power



Oil fired power plants are quite flexible and relatively inexpensive to construct. However, oil produces significant pollution and often bring about security issues.

**FLEXIBLE**



**1400 MEUR per brick**

**INFLEXIBLE**



**1200 MEUR per brick.**



# Oil Power



**Capacity Card 4**



# Oil Power



Oil fired power plants are quite flexible and relatively inexpensive to construct. However, oil produces significant pollution and often bring about security issues.

**FLEXIBLE**



**1400 MEUR per brick**

**INFLEXIBLE**



**1200 MEUR per brick.**



# Oil Power



**Capacity Card 4**

# Oil Power



Oil fired power plants are quite flexible and relatively inexpensive to construct. However, oil produces significant pollution and often bring about security issues.

**FLEXIBLE**



**1400 MEUR per brick**

**INFLEXIBLE**



**1200 MEUR per brick.**



# Oil Power



**Capacity Card 4**



# Biomass Power



Biomass power plants are expensive as they should be able to process wood, straw and possibly some forms of waste.

**FLEXIBLE**



**1200 MEUR per brick**

**INFLEXIBLE**



**900 MEUR per brick.**



## Biomass Power



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**Capacity Card 5**



# Biomass Power



Biomass power plants are expensive as they should be able to process wood, straw and possibly some forms of waste.

**FLEXIBLE**



**1200 MEUR per brick**

**INFLEXIBLE**



**900 MEUR per brick.**



## Biomass Power



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*the global coalition for a clean, prosperous and secure energy future*

**Capacity Card 5**



# Biomass Power



Biomass power plants are expensive as they should be able to process wood, straw and possibly some forms of waste.

**FLEXIBLE**



**1200 MEUR per brick**

**INFLEXIBLE**



**900 MEUR per brick.**



## Biomass Power

 **ENERGYCROSSROADS**  
*the global coalition for a clean, prosperous and secure energy future*

**Capacity Card 5**



# Biomass Power



Biomass power plants are expensive as they should be able to process wood, straw and possibly some forms of waste.

**FLEXIBLE**



**1200 MEUR per brick**

**INFLEXIBLE**



**900 MEUR per brick.**



## Biomass Power



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**Capacity Card 5**



# Gas turbines



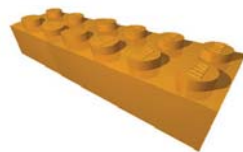
Gas turbines can be built at a low capital cost. However, the natural gas is expensive to buy and is by and large imported from Russia.

**FLEXIBLE**



**900 MEUR per brick**

**INFLEXIBLE**



**800 MEUR per brick.**



## Gas turbines



**Capacity Card 6**

# Gas turbines



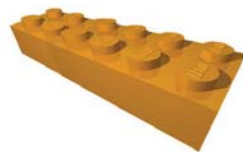
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## Gas turbines



**Capacity Card 6**



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**900 MEUR per brick**

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**800 MEUR per brick.**



## Gas turbines



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**Capacity Card 6**

# Gas turbines



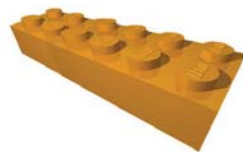
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**FLEXIBLE**



**900 MEUR per brick**

**INFLEXIBLE**



**800 MEUR per brick.**



## Gas turbines



**Capacity Card 6**



# Hydropower



Hydropower is primarily used in Norway and Sweden where large areas have been flooded. Extra capacity can be built by damming and flooding additional areas.

**FLEXIBLE**



**900 MEUR per brick**

**INFLEXIBLE**



**800 MEUR per brick.**



# Hydropower



**Capacity Card 7**



# Hydropower



Hydropower is primarily used in Norway and Sweden where large areas have been flooded. Extra capacity can be built by damming and flooding additional areas.

**FLEXIBLE**



**900 MEUR per brick**

**INFLEXIBLE**



**800 MEUR per brick.**



# Hydropower



**Capacity Card 7**



# Hydropower



Hydropower is primarily used in Norway and Sweden where large areas have been flooded. Extra capacity can be built by damming and flooding additional areas.

**FLEXIBLE**



**900 MEUR per brick**

**INFLEXIBLE**



**800 MEUR per brick.**



# Hydropower



**Capacity Card 7**



# Hydropower



Hydropower is primarily used in Norway and Sweden where large areas have been flooded. Extra capacity can be built by damming and flooding additional areas.

**FLEXIBLE**



**900 MEUR per brick**

**INFLEXIBLE**



**800 MEUR per brick.**



# Hydropower



**Capacity Card 7**



# Nuclear Power



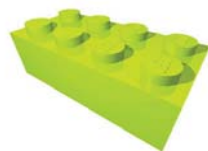
Nuclear power emits no CO<sub>2</sub> but it produces radioactive waste which must be disposed of.

**FLEXIBLE**



**N/A**

**INFLEXIBLE**



**600 MEUR per brick.**



# Nuclear Power



**Capacity Card 8**



# Nuclear Power



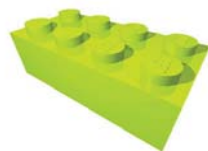
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**FLEXIBLE**



**N/A**

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**600 MEUR per brick.**



# Nuclear Power



**Capacity Card 8**



# Nuclear Power



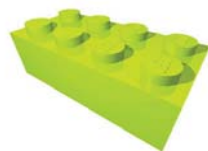
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**N/A**

**INFLEXIBLE**



**600 MEUR per brick.**



# Nuclear Power



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# Nuclear Power



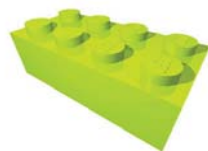
Nuclear power emits no CO<sub>2</sub> but it produces radioactive waste which must be disposed of.

**FLEXIBLE**



**N/A**

**INFLEXIBLE**



**600 MEUR per brick.**



# Nuclear Power



**Capacity Card 8**



# Solar Photovoltaics

North



Solar PV's are expensive to produce and only generate energy in the daytime. Large areas of solar PV's are needed to produce the energy equivalent of 1 brick.

**Uncontrollable**



**2500 MEUR per brick.**



## Solar Photovoltaics



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**Capacity Card 9**



# Solar Photovoltaics

South



Solar PV's are expensive to produce and only generate energy in the daytime. Large areas of solar PV's are needed to produce the energy equivalent of 1 brick.

**Uncontrollable**



**1500 MEUR per brick.**

NB! PV's does not need to be backed up by flexible bricks in Southern Europe since PV output partly follows consumption patterns there.



## Solar Photovoltaics



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**Capacity Card 9**



# Solar Photovoltaics

East & West



Solar PV's are expensive to produce and only generate energy in the daytime. Large areas of solar PV's are needed to produce the energy equivalent of 1 brick.

**Uncontrollable**



**2000 MEUR per brick.**



## Solar Photovoltaics



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**Capacity Card 9**



# Solar Photovoltaics

East & West



Solar PV's are expensive to produce and only generate energy in the daytime. Large areas of solar PV's are needed to produce the energy equivalent of 1 brick.

**Uncontrollable**



**2000 MEUR per brick.**



## Solar Photovoltaics



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**Capacity Card 9**



# Concentrated Solar Power

South



Concentrating sunlight with mirrors produces heat similar to burning fuel. High levels of radiance are needed to run the generate electricity sufficiently.

**Inflexible**



**700 MEUR per brick.**

NB! CSP does not need to be backed up by flexible bricks in Southern Europe since CSP output partly follows consumption patterns.



## Concentrated Solar Power



**Capacity Card 10**



# North Africa is almost Europe

East



Producing electricity for your region with concentrated solar power in North Africa can be made possible. CSP generates electricity with concentrated sunlight as heat source instead of fuel. **Requires supergrid connection to South Europe.**

**Inflexible**



**700 MEUR per brick. MAX 3 BRICKS!**

NB! CSP does not need to be backed up by flexible bricks since CSP output partly follows consumption patterns.



# North Africa is almost Europe



**ENERGYCROSSROADS**

*the global coalition for a clean, prosperous and secure energy future*

**Capacity Card 11**



# North Africa is almost Europe

West



Producing electricity for your region with concentrated solar power in North Africa can be made possible. CSP generates electricity with concentrated sunlight as heat source instead of fuel. **Requires supergrid connection to South Europe.**

**Inflexible**



**700 MEUR per brick. MAX 3 BRICKS!**

NB! CSP does not need to be backed up by flexible bricks since CSP output partly follows consumption patterns.



# North Africa is almost Europe

 **ENERGYCROSSROADS**  
*the global coalition for a clean, prosperous and secure energy future*

**Capacity Card 11**



# North Africa is almost Europe

North



Producing electricity for your region with concentrated solar power in North Africa can be made possible. CSP generates electricity with concentrated sunlight as heat source instead of fuel. **Requires supergrid connection to South Europe.**

Inflexible



**700 MEUR per brick. MAX 2 BRICKS!**

NB! CSP does not need to be backed up by flexible bricks since CSP output partly follows consumption patterns.



# North Africa is almost Europe

 **ENERGYCROSSROADS**  
*the global coalition for a clean, prosperous and secure energy future*

**Capacity Card 11**



# North Africa is almost Europe

South



Producing electricity for your region with concentrated solar power in North Africa can be made possible. CSP generates electricity with concentrated sunlight as heat source instead of fuel. **Requires supergrid connection.**

**Inflexible**



**700 MEUR per brick. MAX 4 BRICKS!**

NB! CSP does not need to be backed up by flexible bricks since CSP output partly follows consumption patterns.



# North Africa is almost Europe



**Capacity Card 11**