

The Netherlands: Small country, big ambitions.



*Estelle van den Broek
Sare Sagir
Linsey van Kempen
Hajja Diepstraten
Sanne van den Eijnde
Christian Dekker*

The **climate** is changing and the earth's **temperature** continues to rise. What are the **effects** of the **climate change**? How can we prevent the **extreme** climate change effects? And how do **WE** think that the Netherlands can reach the **climate goals** for 2020 and 2050?

EFFECTS

Where is our energy made from now?

Fossil fuels. It takes a lot of time for the source to refill. We get more fossil fuels, than the source can create in the same time, and that's why it's running out.

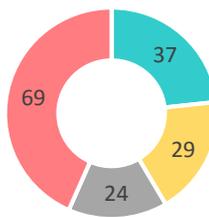
The carbon cycle of fossil fuels takes a lot of time. The amount of greenhouse gasses in the atmosphere will become more and more if we keep using fossil fuels.

2020 & **2050**
20% CO₂ reduction
In comparison to 1990

2050
>80% CO₂ reduction
In comparison to 1990

The amounts of carbon dioxide in megaton that are emitted by different sectors.

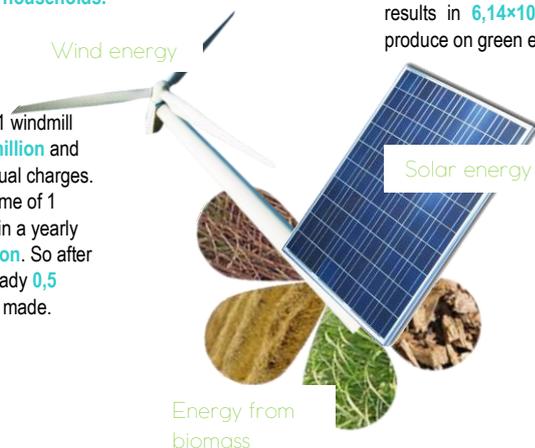
- Traffic and transport
- Buildings
- Agriculture
- Industry, energy and cooling



A regular windmill produces **2 Mega Watt**. This is enough Electricity for **1140 households**.

The installation of 1 windmill costs around **2,3 million** and **0,7 million** on annual charges. But the yearly income of 1 windmill will result in a yearly income of **3,5 million**. So after 1 year there is already **0,5 million** profit to be made.

Wind energy



The whole business area of the Netherlands takes about **1,5%** of the total surface area. By requiring businesses to install solar cells, will be installed **72000000** solar cells. This results in **6,14x10⁷ kWh**, allowing companies to partly produce on green energy.

Before

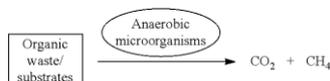
1 household
- 1 m²=120kWh per year
- 29,2 m² solar cells

After

1 household
- 1 m²= 123,12 kWh or
127,8kWh

With the 'normal' solar cells we need an area of **2,16x10⁸ m²** of solar cells. With the improved solar cells, we need **2,10x10⁸ m²** or **2,03x10⁸ m²** of solar cell. Which is a lot less than with the 'normal' solar cells the difference is between **5470000m²** of **13170000m²**.

Energy from biomass



1,7*10¹⁰ m³ biogas is needed to provide the Netherlands. That is more than the average number of gas that is needed **11550000000 m³**.

Driving on bioethanol reduces CO₂ emissions by **34%** relative to diesel and **45%** relative to gasoline. To drive on bio-ethanol you will need more than diesel, because the calorific value of bio-ethanol is lower than diesel.

>5

Extinction of a lot of plant and animal species.

+4

Worldwide, the health is suffering severely from the effects of the climate change.

+3

30% of the coast areas will be gone.

Everywhere, there will be a reduction of the crop yield.

The risk of floods increases.

Most of the corals will bleach. If the temperature continues to rise, the coral will die away.

+2

The risk of the extinction of 30% of all plant and animal species increases.

The crop yield will be better in some places and in other places worse.

+1

Hundreds of millions of people have to deal with water shortages.

The heat causes diseases and other health issues.

2016

1850