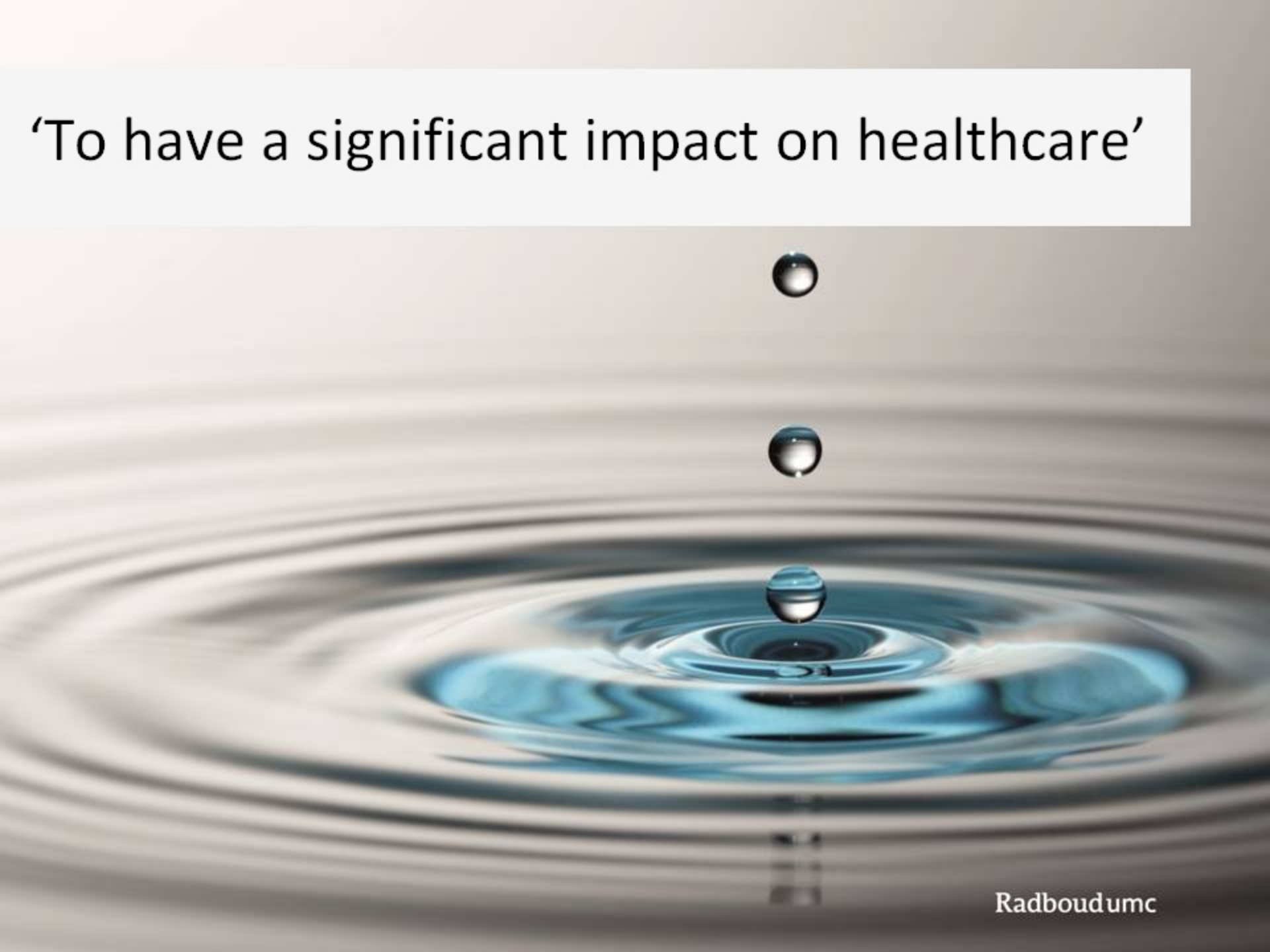
Radboudumc 100% RE

Radboudumc

‘To have a significant impact on healthcare’



Real estate transition 2018-2025

Energy transition

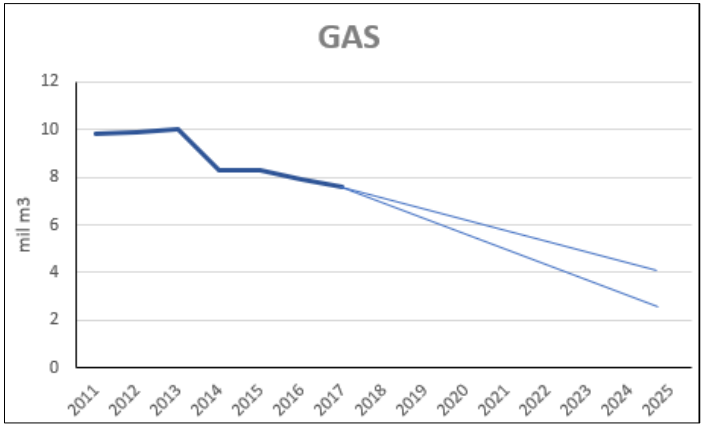
Ambition Radboudumc: carbon-neutral by 2030, preferable energy neutral.

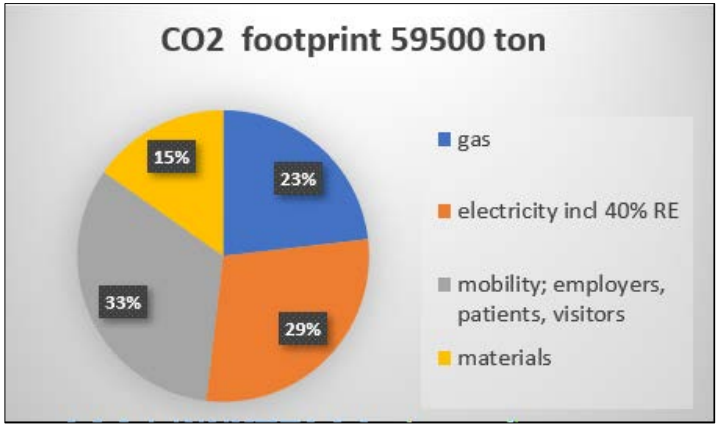
Challenges

- The campus, including the Radboud University, uses 110 GWh electricity and 12 milion m3 of gas annually
- No opportunity to produce that all on-campus
- Investing in energy producers is complex for a public organization
- No solutions yet for efficient production of steam

Energy use Radboudumc

Gas 7.8 mil m3 /year
Elektricity 52 mil kWh /year





Electricity tender 2018

Radboud wanted to contribute to an increase in sustainable *generation*, not merely using energy from existing installation.

- EU rules forbid direct bilateral consultation; had to submit open EU tender.

Consulting the market prior to tender;

What is reasonable to ask

Consulting the market prior to tender;

What tender will benefit the developers of green generation

Unique tender

Quality

- Presumed portfolio sustainable generation to be realized before 2024
- Possibility to invest in small project in neighborhood

Prices

- Surcharges on market prices and green electricity allowances
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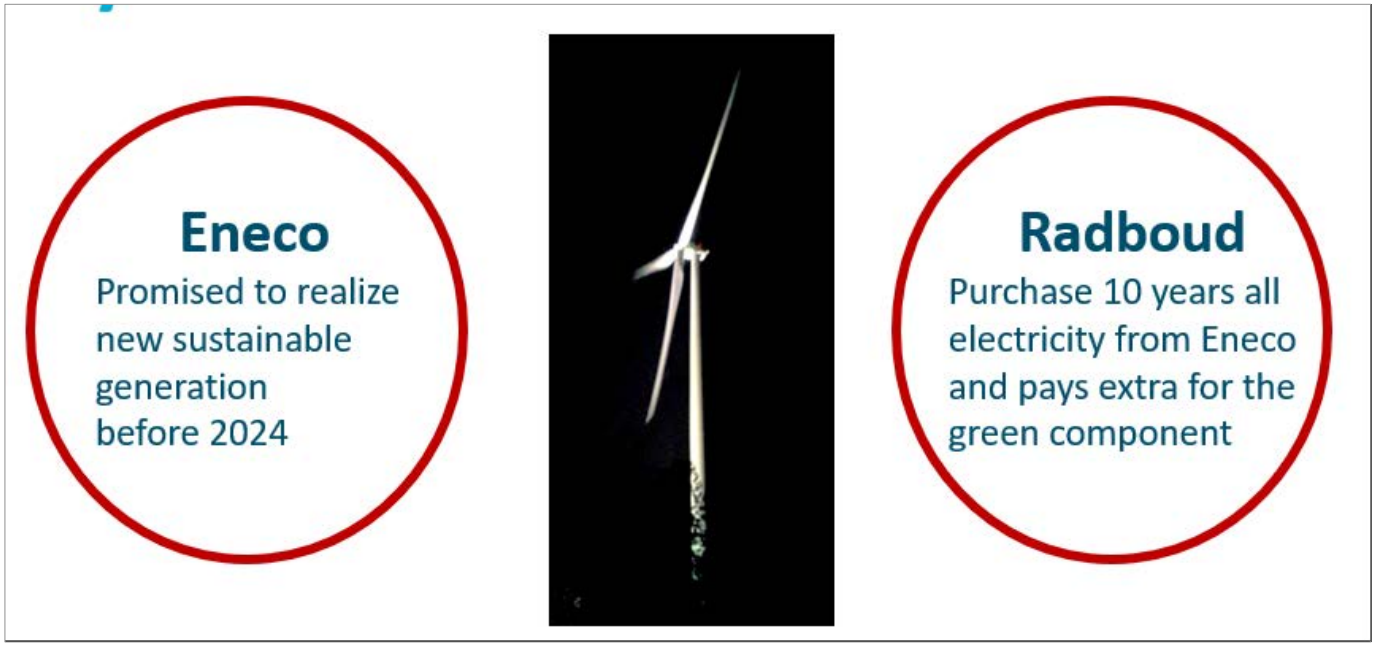
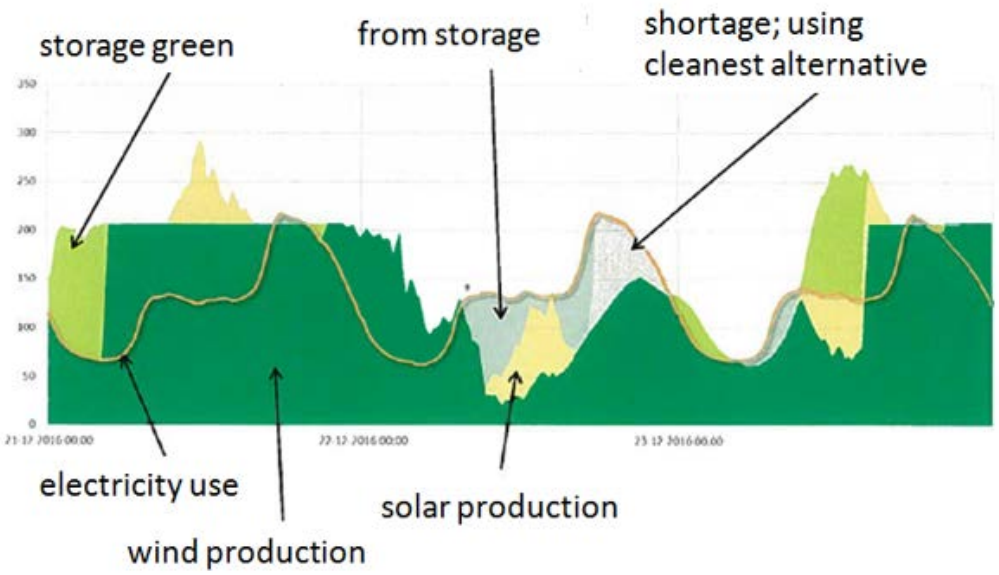
10 years contract Radboud and Eneco



- Radboud: 50% green electricity in 2022 100% green in 2024
- Eneco: better business case through guaranteed sale of green electricity

Hour matching part of the agreement

Research to optimize portfolio of generation, storage and demand side management



Aim to complete one or more pilot project

Economic value

- Radboud fixes the electricity price in 10% slices of the year volume, on market price 1-3 year ahead
- Additional cost of green electricity € 240.000 /year
  4.5-6.5% of the all-in electricity prices,
  which depends on market price
- CO_2 reduction of 27.000 ton CO_2
  (based on the present Dutch fuel generation)
- 30% reduction of our present CO_2 footprint including scope 3

Our win is not financial, it is our contribution to CO_2 reduction

Next steps

- Follow up on reduction of gas usage
- Find an efficient way to produce steam and/or change sterilisation processes.
- Find a CO2 neutral way of generating high temperature heat for buildings that cannot be adapted and/or hot water treatment:
  - High temperature heatpumps
  - Ultra-deep geothermal energy
  - Waste to energy conversion.