



Aquathermal energy in the Netherlands

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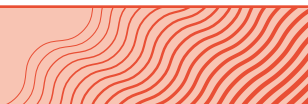
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Introducing...

Henk Looijen



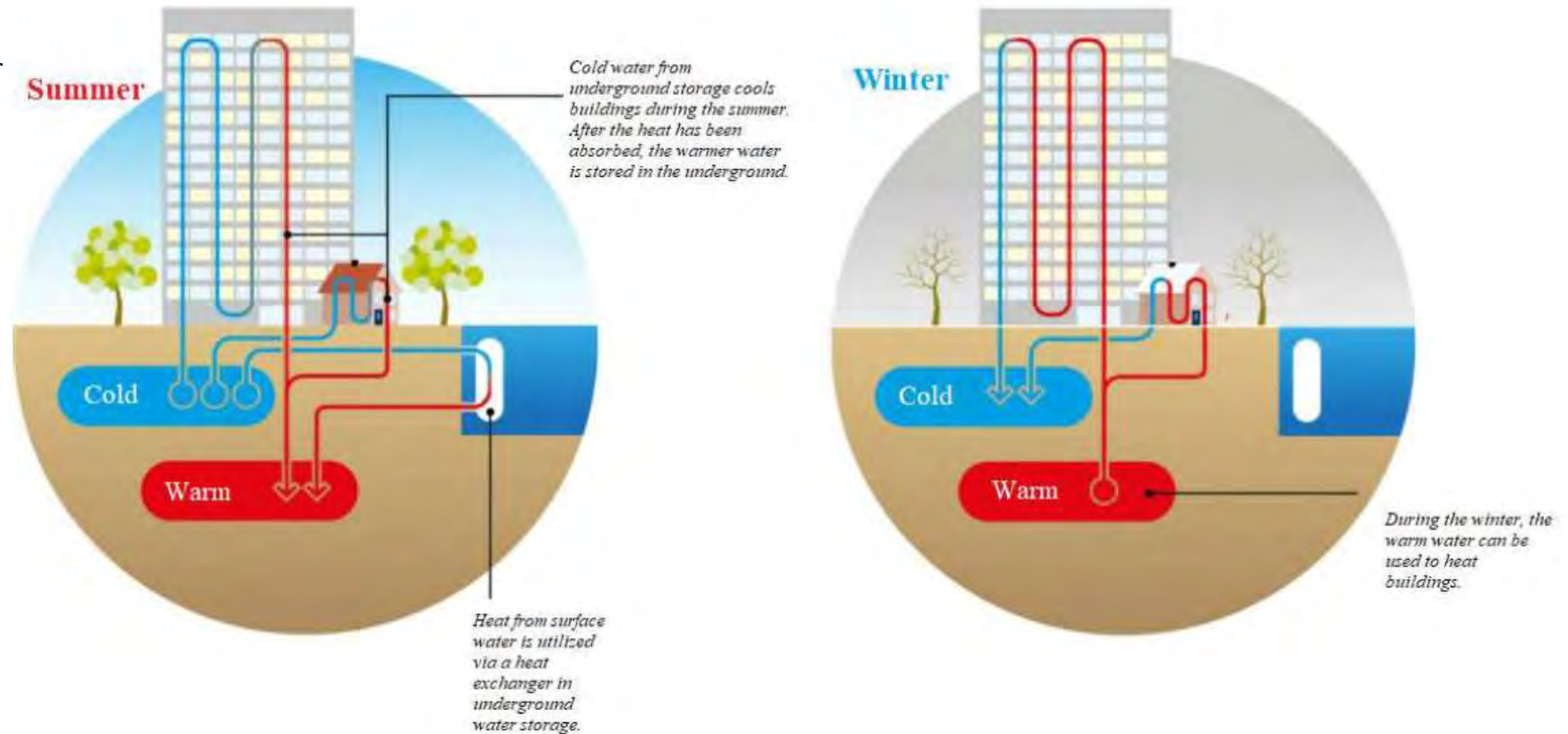
- Senior advisor at Rijkswaterstaat
- 2 days per week at Network Aquathermie
- Connector knowledge and research
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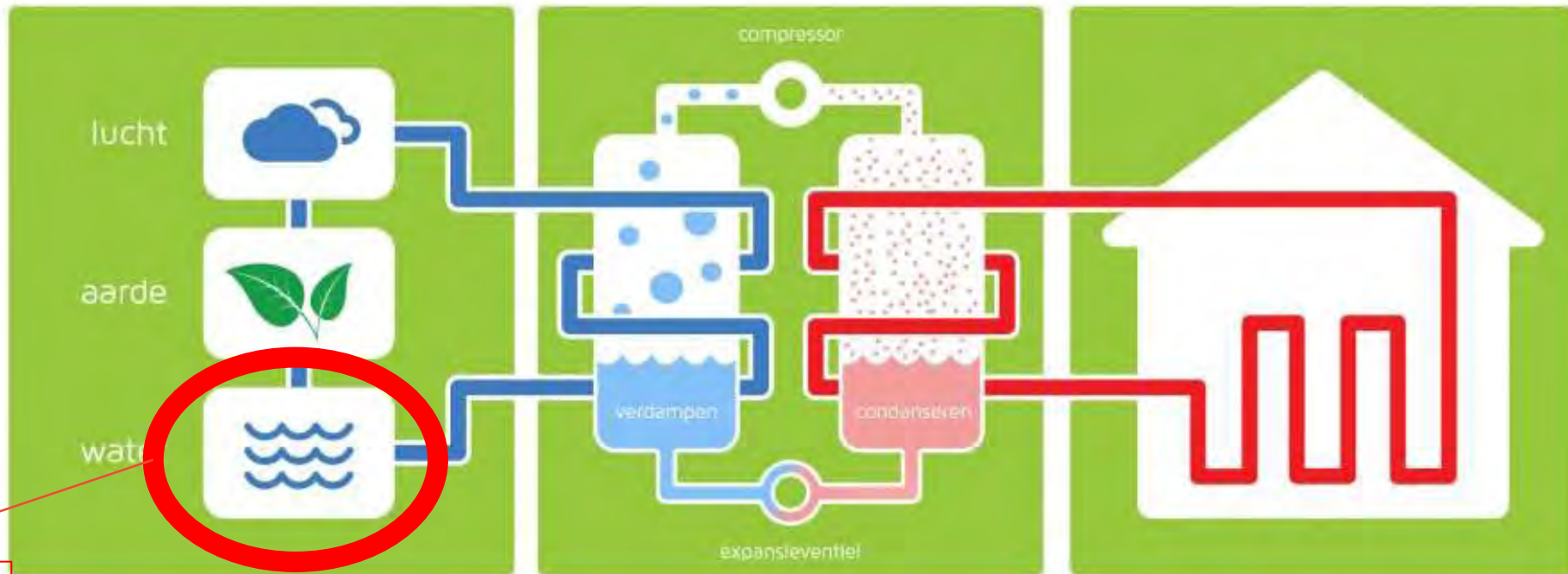
What is Aquathermal energy?

- Using heat from water
- Wastewater, drinking water and surface water
- Picture focus on surface water

- Withdraw heat in summer, use in winter
- Store heat in ATEs system
- Benefits
 - Extra LT heat source
 - Efficient use of heat pumps
 - Ecological benefits?



The Heatpump



Aquathermal
energy

75% heat from environment + 25% electrical energy = 100% heating

What is attractive about aquathermal energy?

Source



Surface water

- Widely applicable
- Great potential
- Possible improvement of water quality
- Also cooling



Drinking water

- With clean water: no pollution heat exchanger
- Large supply pipes give great potential
- Also cooling



Sewage water

- Temperature sewage water constant during winter
- From effluent = no regret

General aquathermal energy

- CO2 emissions to ZERO by 2050
- Everywhere in NL water or pipes with drinking water or sewage water
- Good starter for expandable heat networks

Green Deal Aquathermie

- Inducement: Dutch Climate agreement, Energy Transition
- **Aim:** Accelerating energy transition by mapping value and application of aquathermal energy (joint fact finding)
- 65 parties involved
- Start Green Deal May 2019
- Netwerk Aquathermie (NAT)



Main focus (1/3): developing knowledge on challenges



- **Technology:**
 - Designing guidelines
 - Configurations: integration into heat networks
- **Potential:**
 - Standardising calculations
 - Study potential with accumulating initiatives
- **Funding:**
 - Arrangements
 - Conditions
 - Subsidies
- **Governance:**
 - Arrangements
 - Roles of parties
- **Environment**
 - Impact on the water system/ecology

Main focus (2/3): sharing knowledge

- Communication: www.aquathermie.nl, social media
- Inventory of realised projects (National, and now European)
- Community of Practice
- Interaction with other climate programs
- Aquathermieviewer (potential on GIS)



Main focus (3/3) securing knowledge and activating the network



- Broadening and deepening the network
- Administrative meetings
- CoP and webinar

- Securing knowledge through agreements with parties

Observations

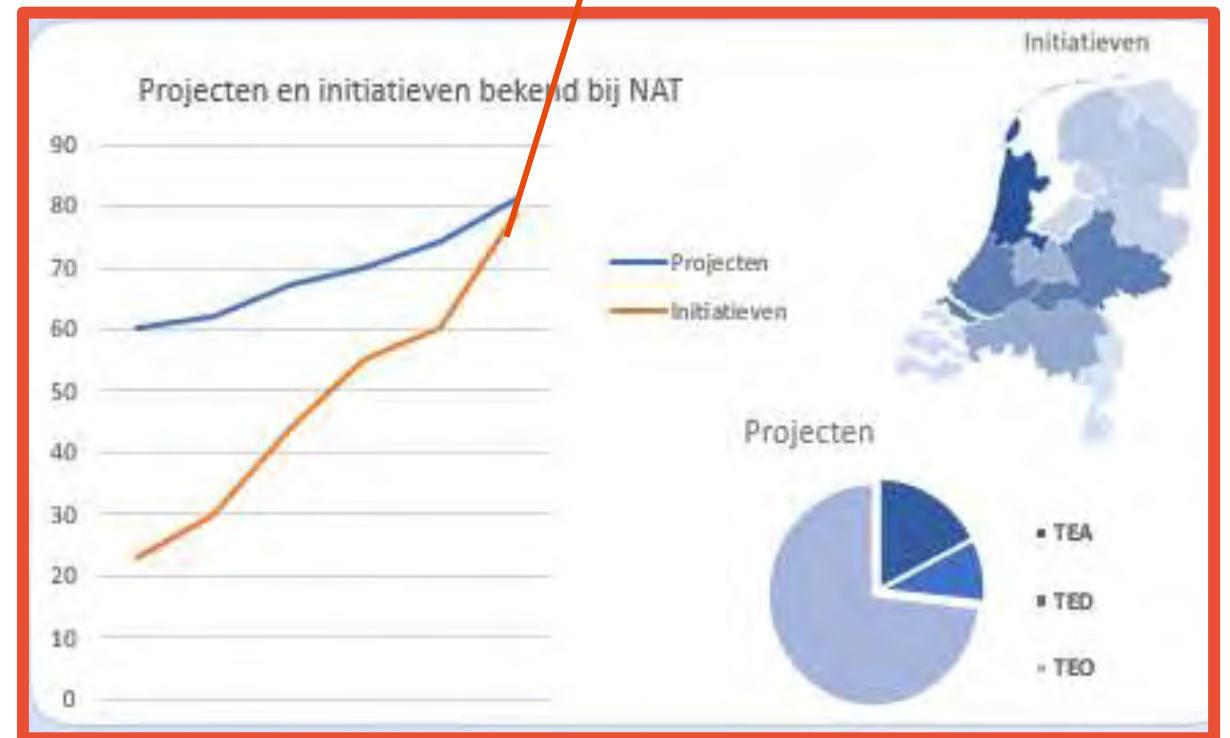
Rapid growth of initiatives!

Forecast NAT: 200,000 households on aquathermal energy in 2030 (15% goals Climate Agreement)

Heating (LT/MT) and cooling of homes and utilities (offices, swimming pools, care, shops)

Challenge: how do we get from research to realization? Working on standards: European cooperation?

125+





Thank you for your attention

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