Rijksdienst voor Ondernemend Nederland

Dutch hybrid heat pump action plan

Randall Hanegraaf

Dutch Enterprice Agency

CA-RES
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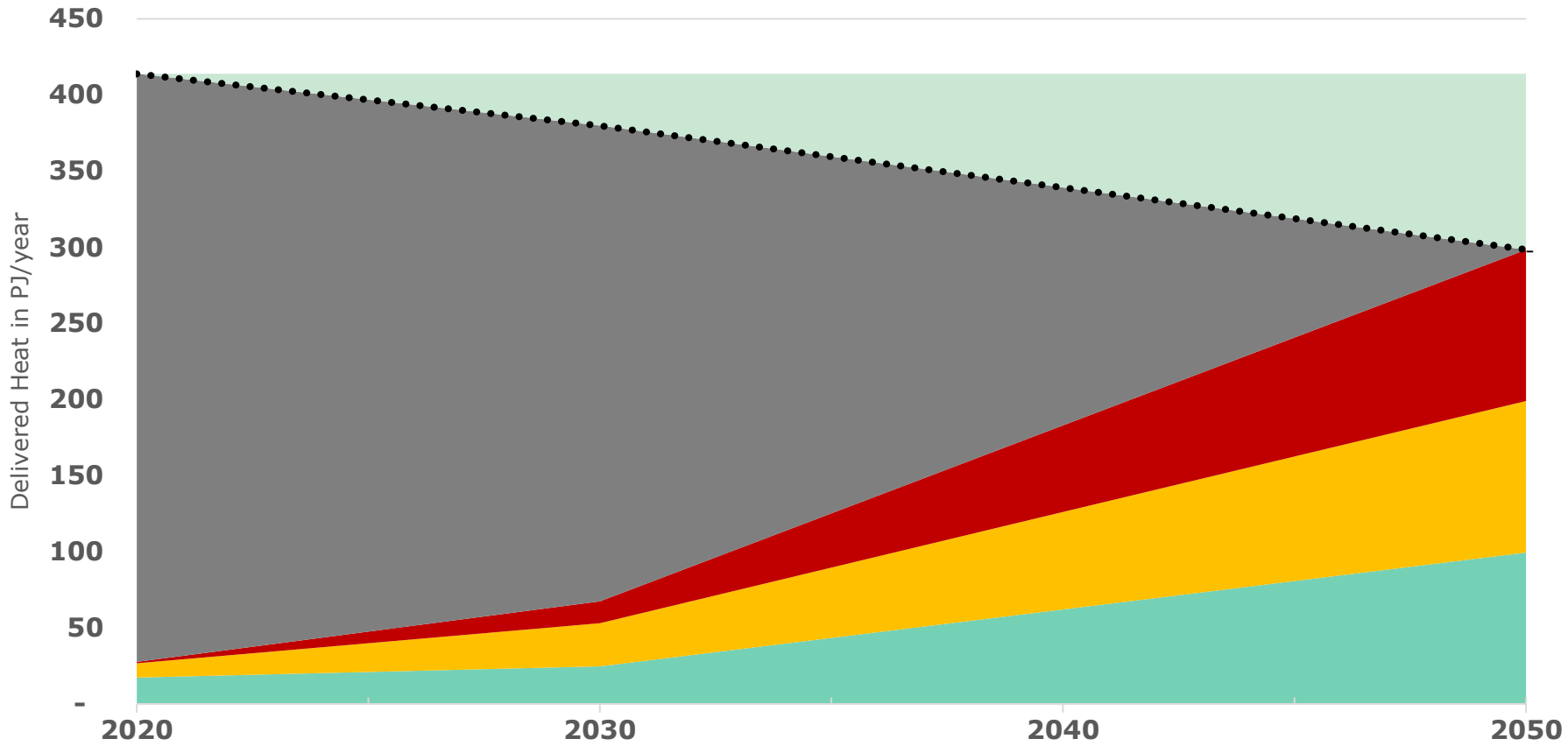
Dutch existing building stock: overview & challenge

- 7.9 million existing homes 90% with individual gas boilers
- 6% district heating
- 0.57 million non-residential buildings (production halls, offices etc.)
- Earthquakes in Groningen
- End of national gas production in Groningen
- Climate targets
- Exploding price of natural gas
- Electricity grid is congested in large parts of NL.

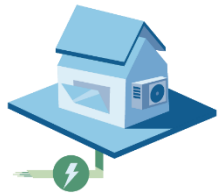
Challenge – expected distribution of heat in 2050



Energy saving (e.g. insulation)

District heating (~70 °C)

Electrical heat pump



Renewable gas + (hybrid) heat pump

Heat pump strategy

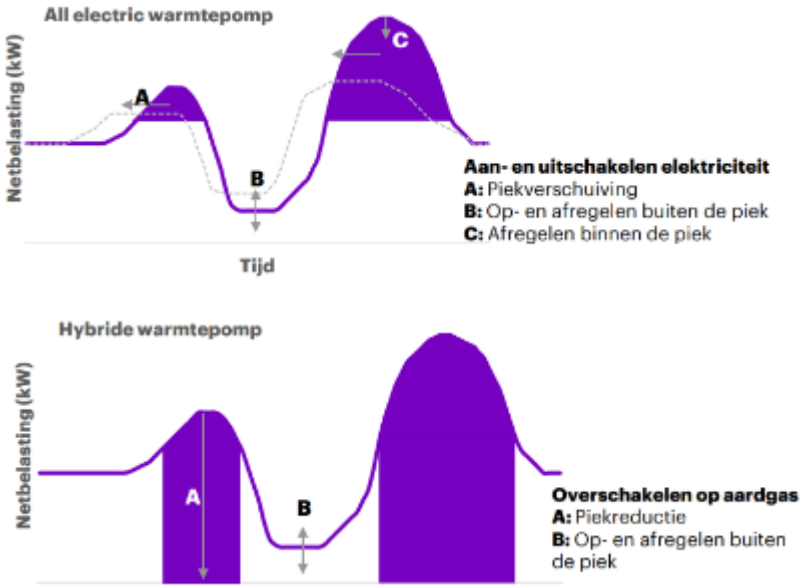
- The Netherlands views the hybrid heat pump **both as a transitional technology** for buildings where a full electric heat pump or a district heating network is a possibility **and as a long-term technology** for buildings where an all-electric heat pump is not possible/viable.
- There are categories of buildings where an all-electric heat pump or a district heating network is not possible.
  - Rural areas
  - Monuments
  - Buildings with limited possibilities for insulation
- A combination of the hybrid heat pump with **green gas** or **hydrogen** (after 2030) is seen as a long-term solution.

Heat pump strategy

- The Dutch government is not worried that hybrids are installed, as they **do not create a lock-in situation**.
- During or after the end of life (of the installation) it is still possible to **reconfigure to an all-electric configuration**.
- The ministry aims for building owners to make **the right decision at the right time**. So, the Dutch government works together with **sector based parties** that represent producers and installers.
- **The goal is to educate** both the **general population** and the **installers** to know when an all-electric heat pump is a viable option. **There are tools available** for both groups to make the right decision.
- The Dutch government also launched a **public campaign** to inform house owners on the best choice for their house. Focus on:
  - Subsidies (ISDE)
  - Regulation
  - Informing (“What is a heat pump & how does it work”)

Heat pump strategy

- The Netherlands have increasing difficulty with congestion on the electricity net.
- District heating and hybrid heat pumps have a significantly lower impact on the electricity net.
- (Hybrid) heat pumps, additionally, offer some flexibility on the electricity net (see figure);
  - Peak shaving (A)
  - Up & downscaling outside of the peak (B)
  - Downscale within peak (C)
- Therefore hybrid heat pumps allow us to lower gas use **now**



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Hybrid Heat Pump Action Plan (HHP AP)

Hybrid heat pump (HHP) action plan

Main goal

- Remove barriers for further increase of HHP
- 125.000 hybrid heat pump installed 2022-2024
- 1 mln hybrid heat pumps in 2030 (policy)

Main actions

- Facilitate more supply by scaling up production
- Training of more qualified professionals
- Reduce costs for production and installation of heat pumps
- Communication (3 year public campaign)
- Monitoring
  - Number of heat pumps installed
  - Number of qualified professionals
  - Development of heat pump prices and installation costs
- Collect, validate and share knowledge
- The impact on the energy grid (monitoring and smart application)

Partners

Vereniging Warmtepompen

Techniek Nederland

NATUUR & MILIEU

Netbeheer Nederland

De Nederlandse Verwarmingsindustrie

Ministerie van Economische Zaken en Klimaat

Ministerie van Binnenlandse Zaken en Koninkrijksrelaties

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Monitoring as a key objective & tool

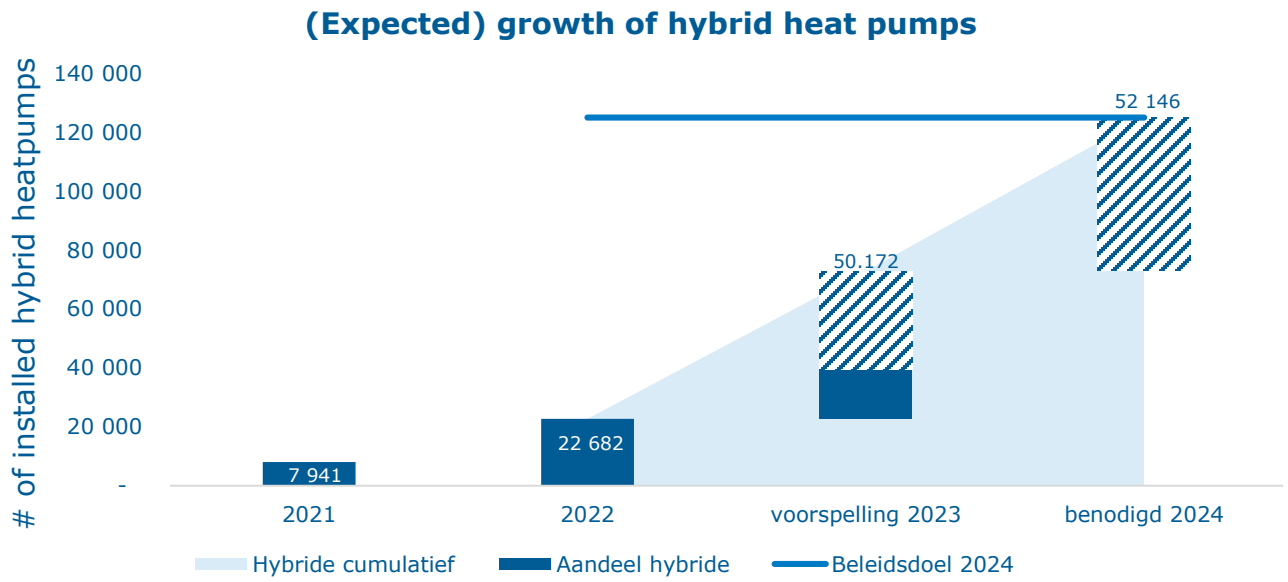
Goals

- Monitoring of heat pump trends
- Monitoring of national policy targets
- Monitoring of heat pump action plan targets
- Using the data to make the correct decisions & setting priorities

Sources

- ISDE (subsidy)
- CBS (Dutch Statistics)
- VWP / NVI / TNL (sector organisations)
- Questionnaires amongst companies and citizens
- CRT (central techniek register)
- And much more

Key analytical conclusions



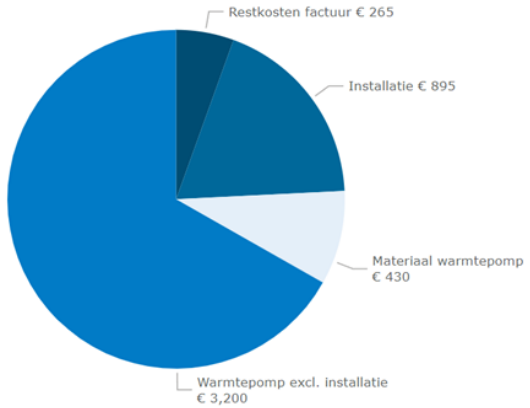
Based on our internal monitoring:

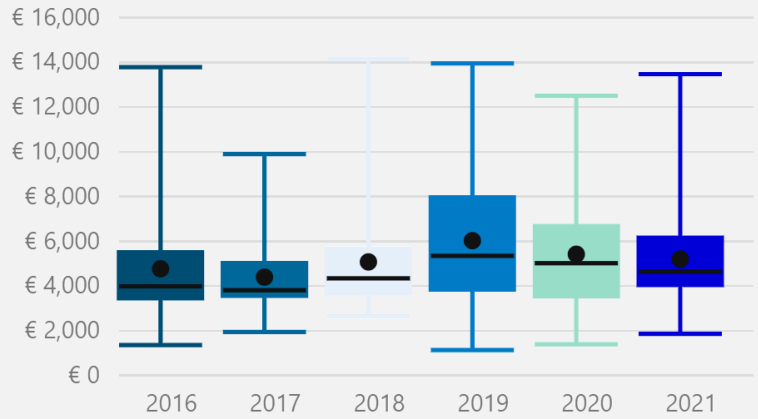
- Significant increase in hybrid sales
- **125.000 additional hybrid heat pumps installed (2022-2024)** in existing houses is **reachable** in 2024 (based on current projections).
- The installation time is still at around **32 hours** per hybrid heat pump. Goal is to reduce this to **16 hours**. There are multiple parties working together to reduce this number (TDI500, action plan).
- Monitoring numbers of qualified installers is very difficult due to no existing framework.

Key analytical conclusions

- Data from 2016 – 2021; ISDE subsidy
- Hybrid heat pump consumer price: €4.790
- All electric heat pump consumer price: €8.488
- Note; it is very difficult to monitor pricing trends due to limited data availability

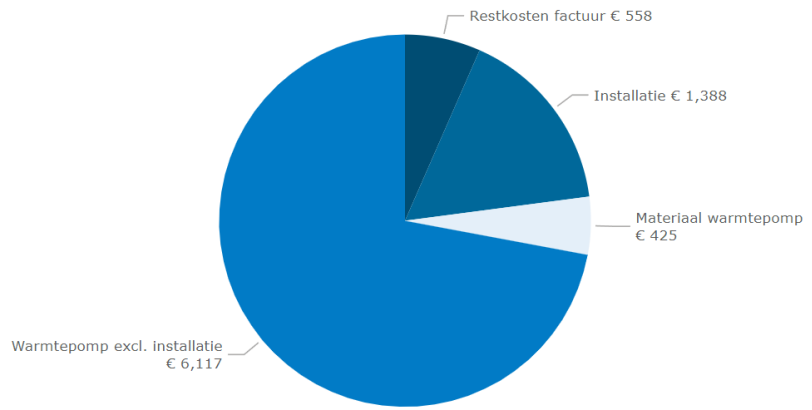
Average price of a hybrid heat pump





Bron: BDH factuuronderzoek

Average price of all-electric heat pump



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Regulation of heating installations

Regulation of heating installations

2026: more efficient heating installation obligatory at moments of replacement (phase out of mono-gasboiler)

Standards for heating installations in buildings (EPBD);

a. % renewable energy

b. Energy efficiency requirements

c. Minimal CO_2-standard

- Further research
  - Methods to determine/calculate route b energy efficiency
  - Exceptions

Important:

- Technology neutral
- Fitting with current regulation
- Simple for homeowner and installation sector
- Exceptions

Conditions and exceptions

1.Enough products and qualified professionals

- Scale-up production and installations
- Action plan HHP

1.Suitability of the installation for the home or the building

- The installation must fit within the household/building
- Able to comfortably and cost-efficiently heat the building
- No structural building adjustments needed
- Monuments and appartements are excluded

1.Prevention of disinvestments

- Exception for cases where a different alternative for natural gas is planned to be realised within 10 years.

Innovation – TDI 500

- TDI (team sustainable installing) is a cooperation of installers and research companies. ~3000+ installers represented.
- TDI-500 is a project aimed to install 500 heat pumps per day. They have received government subsidy.
- TDI-500 links the hybrid heat pump action plan goals to increase the number of installed heat pumps

- https://teamduurzaaminstalleren.nl/index

Questions?