10 Fixes for a Glorious Future of Geothermal Energy in the Netherlands!

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Introduction

- **Who are we?**
  - **Bas van Dun:** Independent advisor and Board member of Geothermie Nederland
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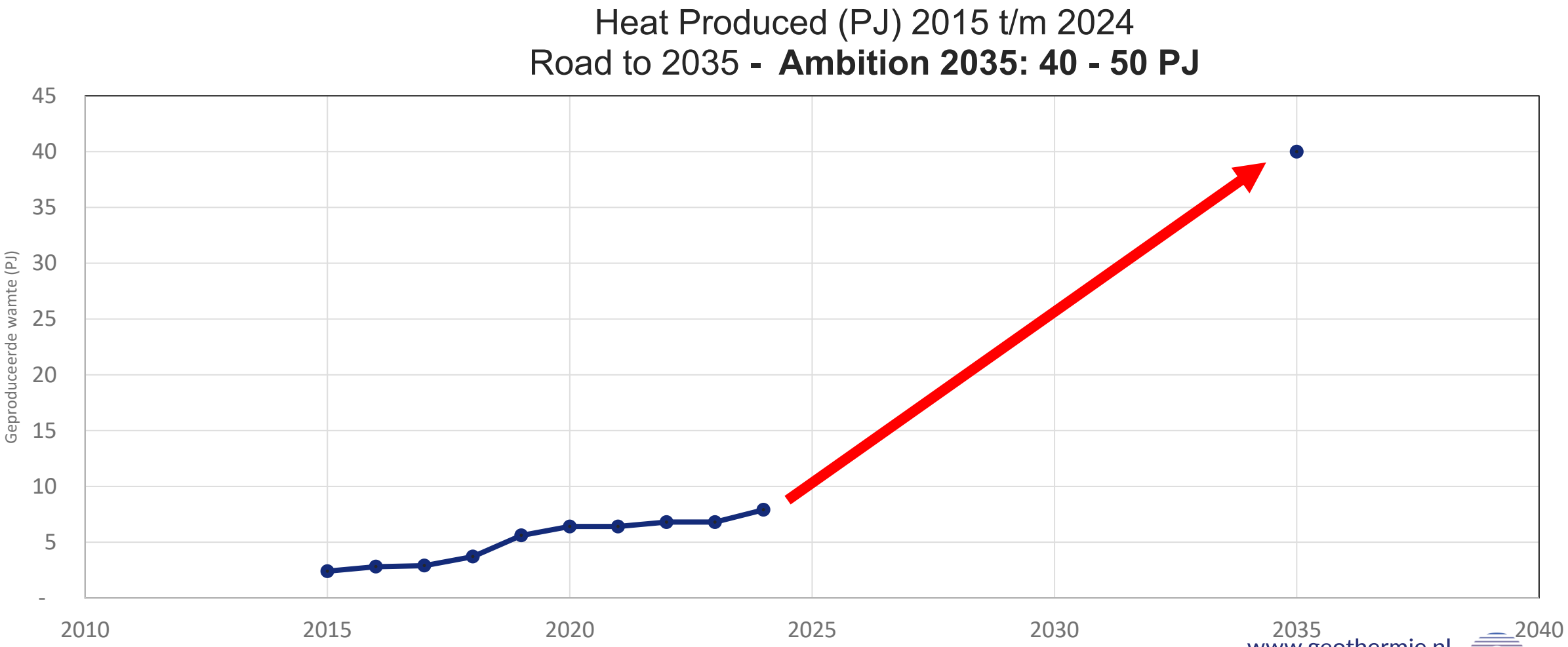
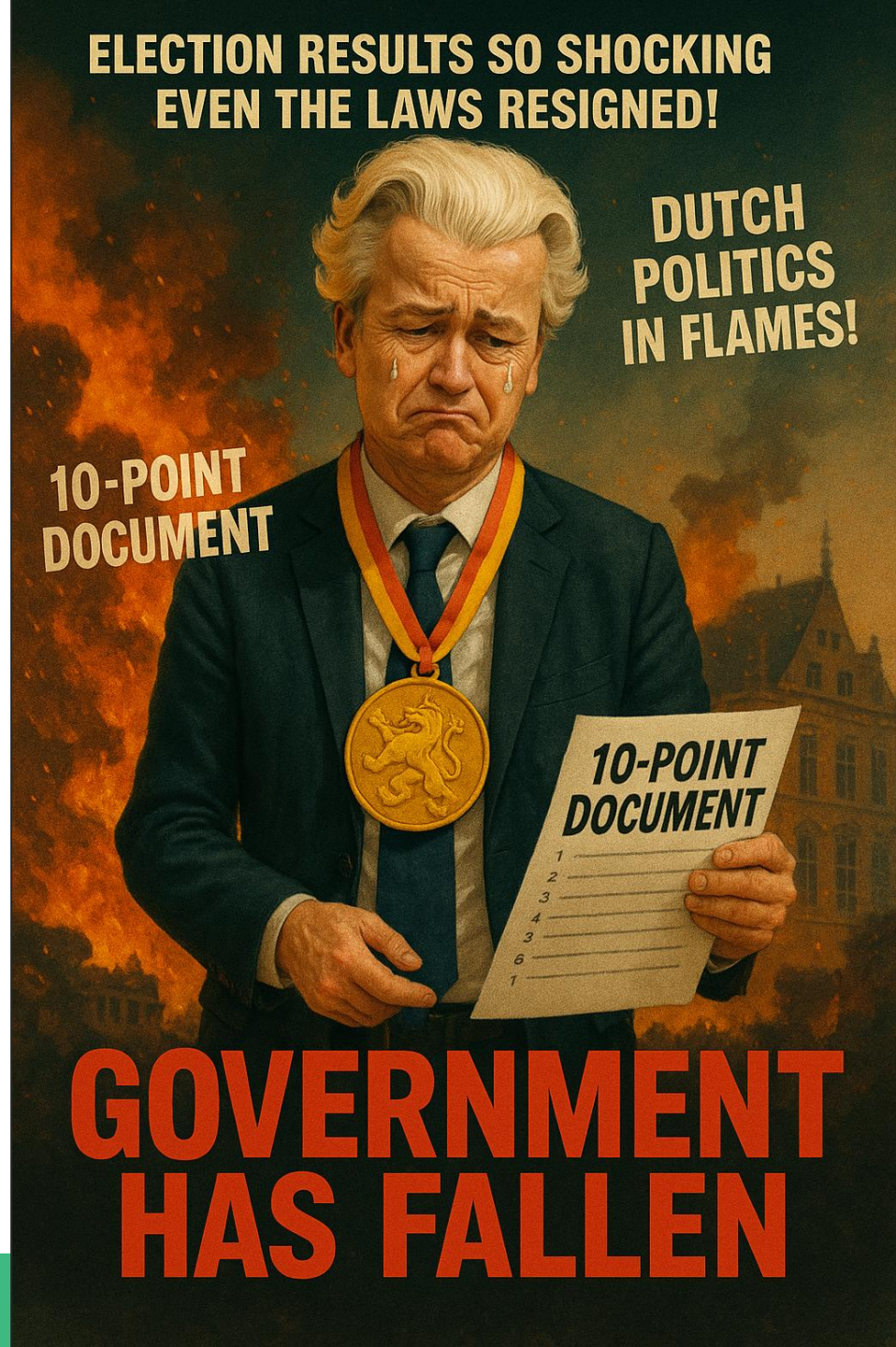
  - **What is Geothermie Nederland?**
  - **Why is the organisation necessary?**

How do get back on the Road to 2035 and the ambition of 40-50 PJ production?



Let’s start with the Dutch news…

- Last week, Geert Wilders caused the break-up of the Schoof-1 cabinet.
- The government talks fell apart over **Wilders' 10-point list,** which other parties refused to support.
- **So, we decided to create our own 10 points Fix-list**!



Point 1) Fix bottlenecks in the current mining law

- The Mining Law changed specifically for Geothermal energy in July 2023
- A new permit system was introduced, with three phases in the process:
    1. *Aanwijzing zoekgebied*
    2. *Startvergunning*
    3. *Vervolgvergunning*
- Unfortunately, it became quickly clear that the new Mining Law for geothermal energy has some contingencies

Point 1) Fix bottlenecks in the current Mining law

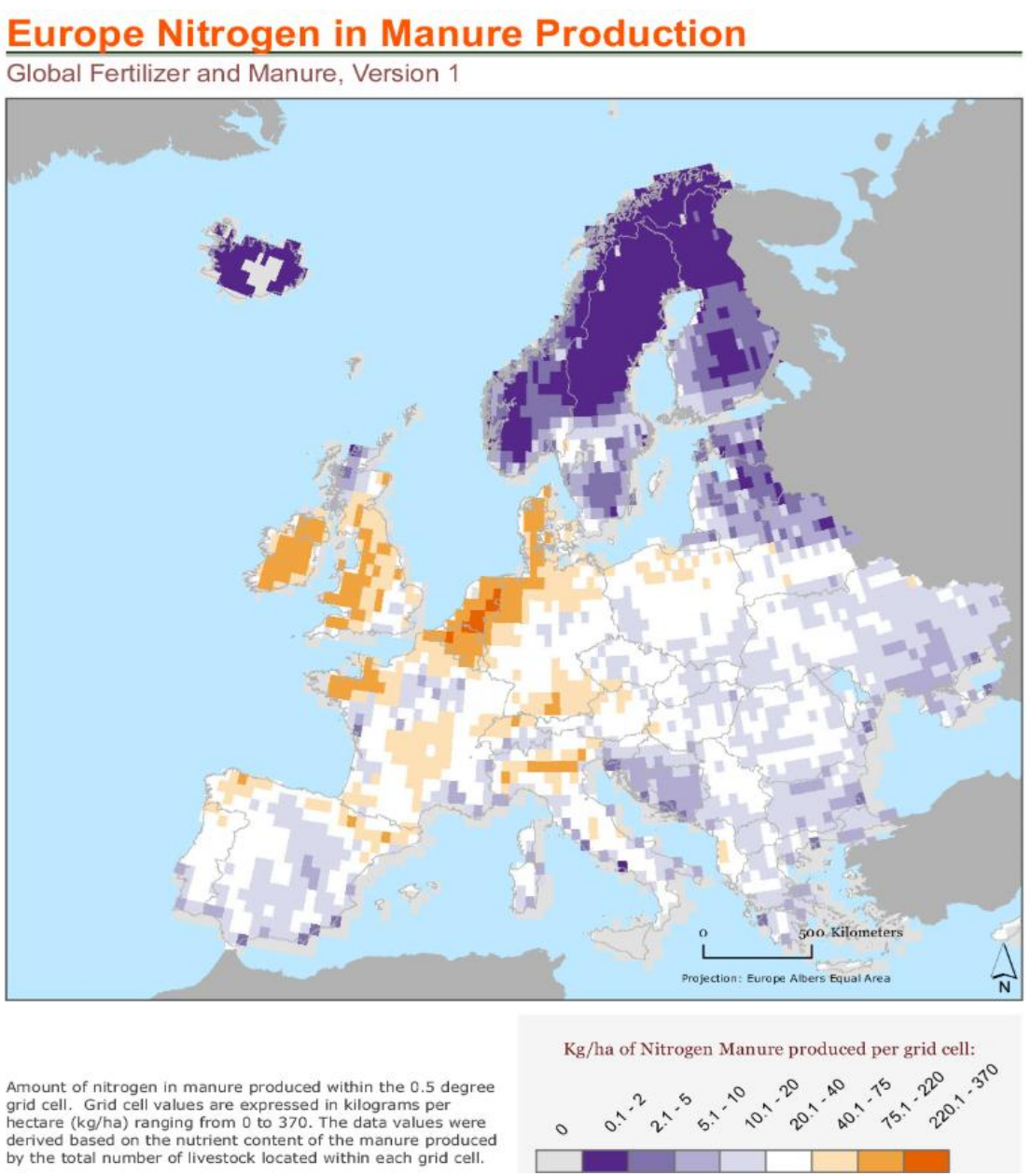
- No options for exploration drilling in ‘toewijzing zoekgebied’
- Permit durations are too short!
- Requirements for the initial permit application are disproportionate high
- Therefore, operators find it sometimes difficult to fulfil the demands for the permit application within the current durations
- Luckily, the ministry of ‘Climate and Green Growth’ is currently in the process of further modernizing the Mining Law, and open for solutions on the permit system

Point 2) Fix the law: Wet Collectieve Warmte
"eigen warmte eerst"

- Regulates public control and pricing in collective heat systems
- Not declared controversial – treatment in Parliament continues despite cabinet fall
- Ends years of legal uncertainty and stagnation for municipalities and heat companies
- Crucial to unlock source development, e.g. geothermal heat
- Effective January 2026 (planned)

Point 3) Fix the NOx!

Caused by:	Nature:
• Intensive livestock farming	Biodiversity loss
• Industrial emissions	Acidification of soil
• Traffic emissions	Damaging ecosystems

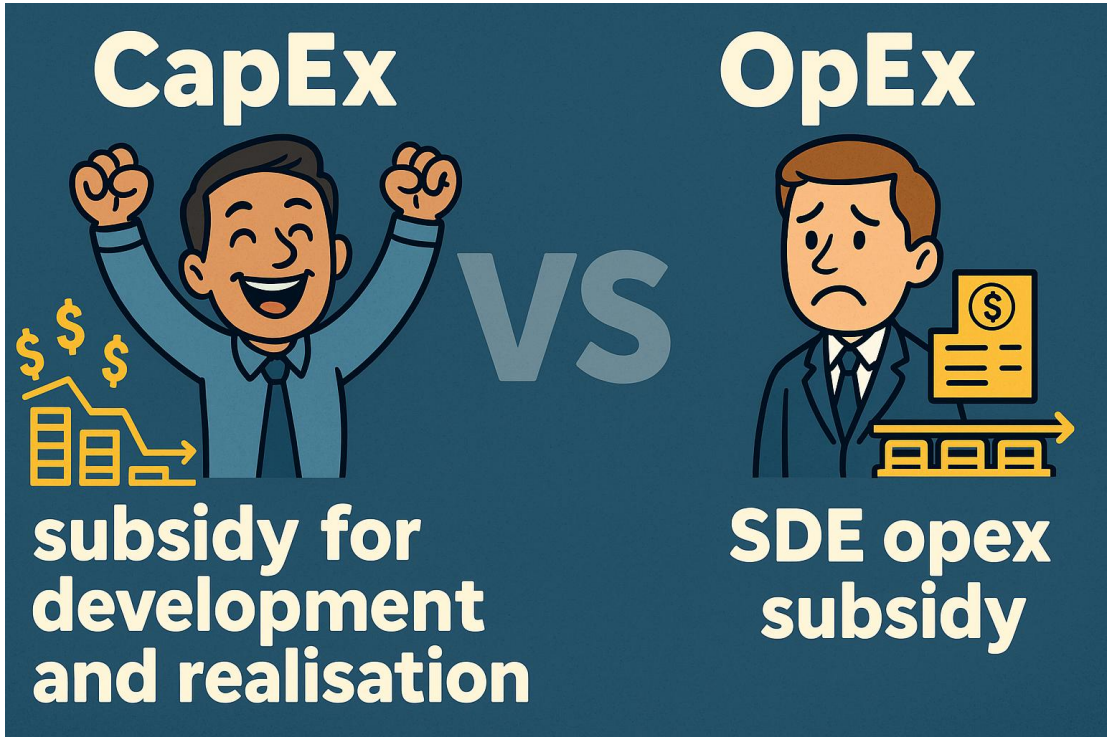


Point 3) Fix the NOx!

Caused by:	Nature	Leads to:
• Intensive livestock farming	Biodiversity loss	✓ **Permit delays**
• Industrial emissions	Acidification of soil	✓ **Construction projects on hold**
• Traffic emissions	Damaging ecosystems	✓ **Slowing down Geothermal development!**

Point 4) Fix the subsidy model!
CAPEX vs OPEX

- Current subsidy scheme is OPEX-based
- Lead time of over 2.5 years before drilling can start
- Pre-investment of up to €3 million required
- High financial risk for early-stage investors
- Unlike wind and solar, geothermal has no clear cost-reduction path — the low-hanging fruit has already been picked



- **Shift from an OPEX- to CAPEX-based subsidy programme**

Point 5) Fix the energy crisis

Caused by:

- Oversupply by solar energy midday
- Peak demand in the evening
- And outdated infrastructure…

↳

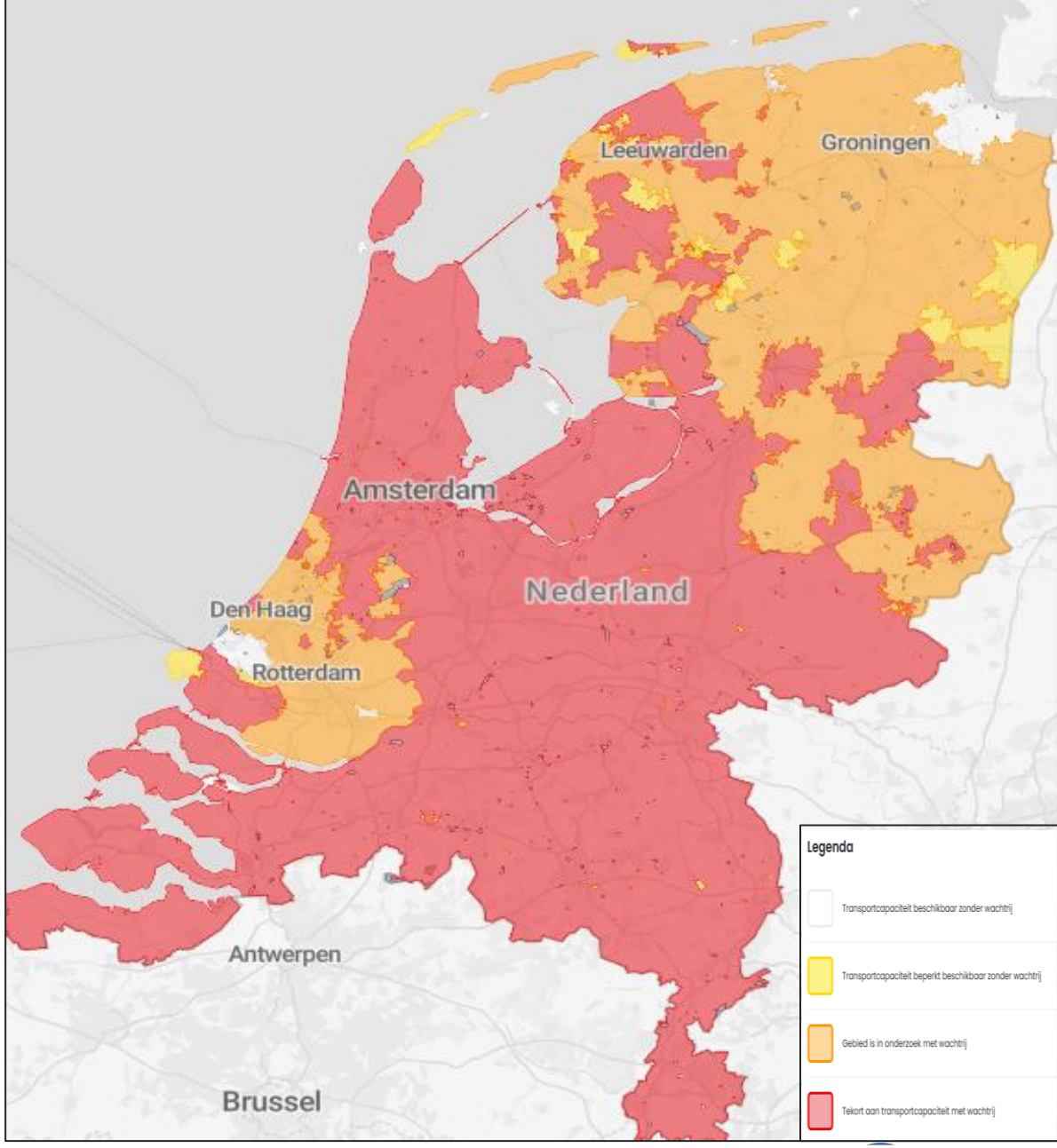
- Follow The Money: **"Power grid overloaded, while billions went to shareholders."**

Point 5) Fix the energy crisis

- Grid congestion = electricity traffic jam
- Supply is there, transport is the problem
- Urgent need for modernization and flexibility

✓ Solution? **Invest invest invest!**

✓ And put (new) geothermal projects high on the priority list!



Point 6) Fix the geothermal risk coverage

Clarity required now!

- Urgent need for government clarity and guarantees
- Local concerns about seismic and subsurface risks
- Unclear framework delays permits and investments
- No liability coverage → investors held back
- No private insurance options available

- **Sector ready to launch fund enquires government support to de-risk early phase**

Point 7) Fix the fiche to accelerate shallow geothermal

From promise to practice

- Only one demo project so far – untapped potential remains high
- Option for greenhouses and urban rollout low-temperature, 5th-generation heat networks, with thermal storage and cooling solutions
- The announced shallow geothermal fiche offers strong potential, but delays in funding are slowing momentum
- To unlock early-stage projects:
  - Explore flexible permitting for lighter drilling setups
  - Where deep layers are unsuitable due to faults or complex geology

Point 8) Critical Choices Facing Municipalities

The collective heat act enforces a shift in responsibilities

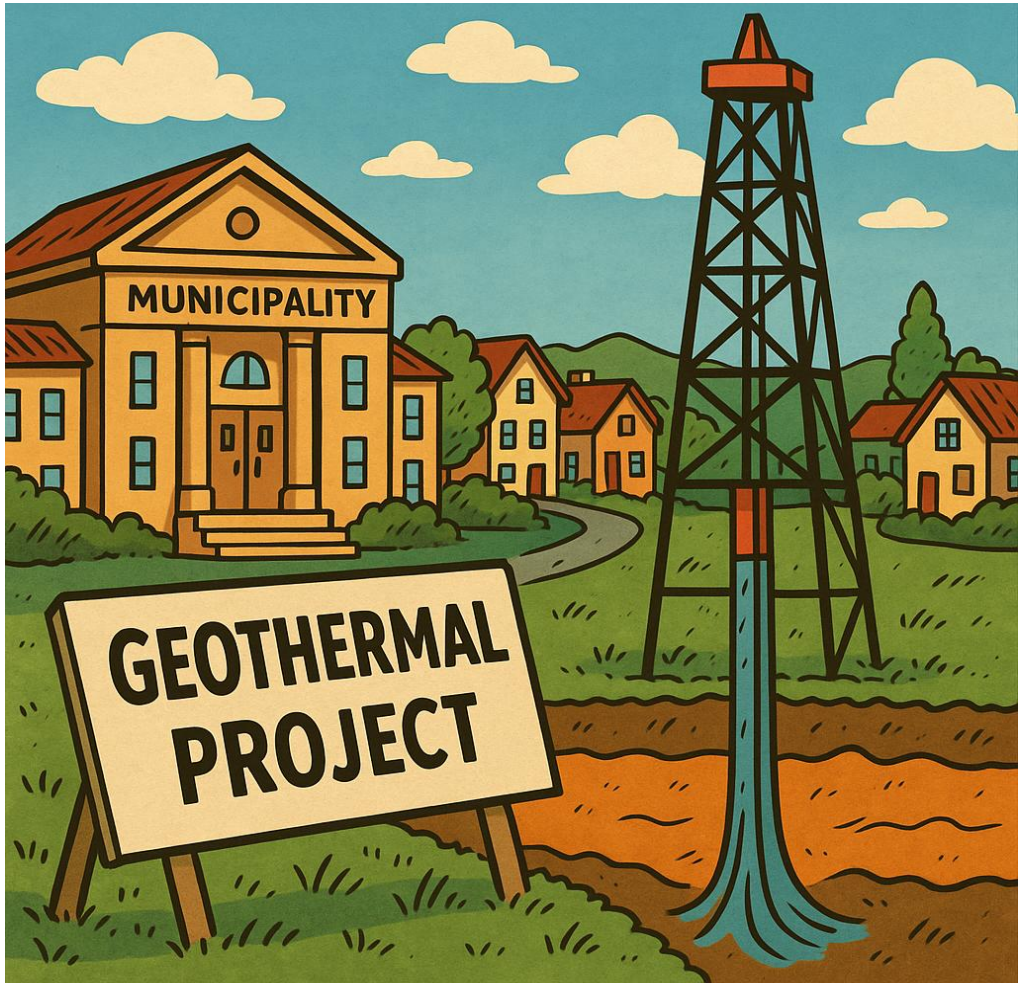
Heat plans due end 2026
(source, transport, delivery.)

Requires public heat company setup or participation

Key decisions: technique, ownership, risk, partners

Local elections before deadline → risk of policy shift

Planning may stall due to political uncertainty



Point 9) Fix central solution, avoid fragmented individual

Prevent grid Congestion – enable scalable, collective heat systems

- Accelerates geothermal district heating rollout

- **Rijnland case**: societal savings vs. all-electric
- No grid overload from electric heat pumps
- Boosts local energy independence
- Government steers toward lowest societal cost solutions

- **Needs**
  Collective Heat Act
  Public co-investment (vs. individual fixes)

Point 10) Fix the high drilling risk

Another missing piece for geothermal scale-up

- Recent setbacks show how **drilling failures** can undermine entire business cases
- RNES reduces **subsurface risk**, but does **not cover drilling failure**
- **Low-hanging fruit is gone** — focus must shift to valuable unexplored “white spot” areas
- **Government-led exploratory drilling** could de-risk early-stage projects

Our 10 points Fix-list!

To accelerate geothermal projects

1. Fix Bottlenecks in the current mining law
2. Fix the law: Wet Collectieve Warmte
3. Fix the NOx!
4. Fix the subsidy model!
5. Fix The energy crisis
6. Fix the geothermal risk coverage
7. Fix the fiche to accelerate shallow geothermal
8. Fix critical choices facing municipalities
9. Fix central solution, avoid fragmented individual
10. Fix the high drilling risk

We can Fix this together!

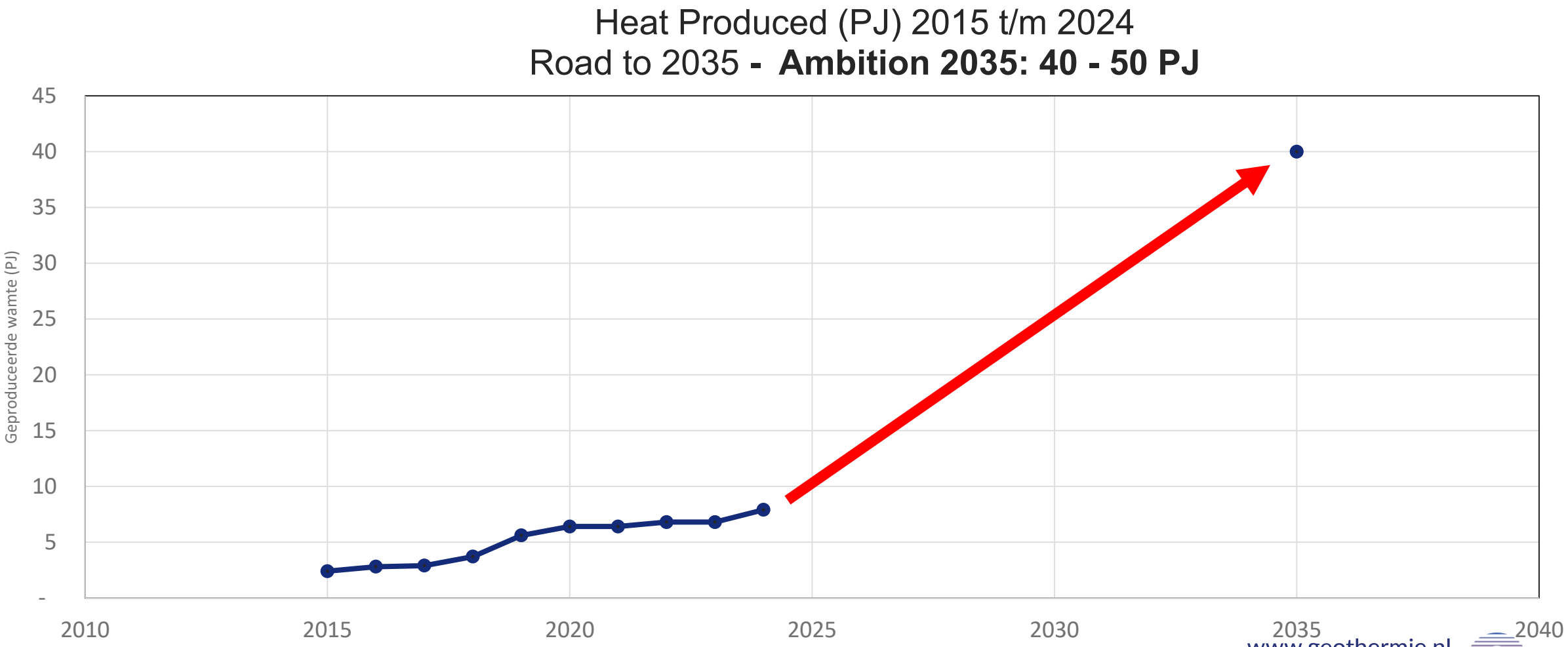
As The motto of the Schoof-1 cabinet was:

"Het kan wél", or **"Yes, we can"**

Don't let geothermal energy go down, as this cabinet did last week ;-)

Time to change course!

Is this Fix-list enough to get back to reach the 2035 target?



Questions for the audience

1) Can we reach the target of 40-50 PJ with this FIX-list in 2035?
   ✓Right now, we're at 8 PJ…

2) What isn't a good FIX in the 10 point-list?

3) What are we missing in the FIX-list?
   ✓Which opportunities are still out there?

4) Or should we lower our national ambitions?