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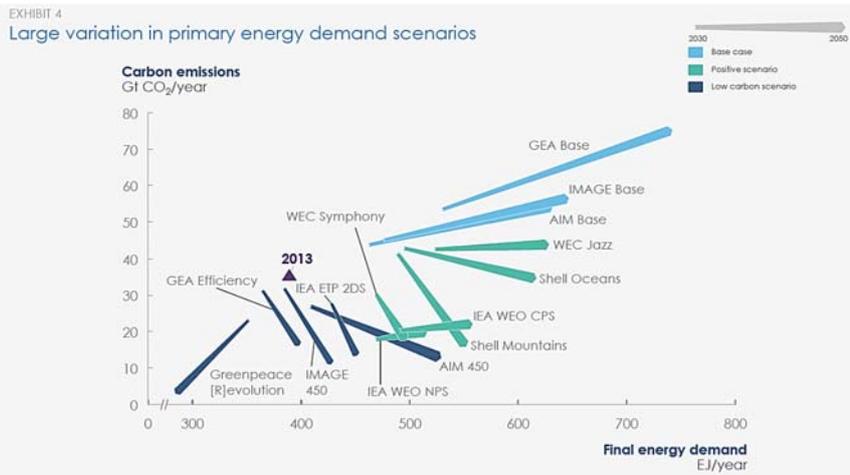
Over Klimaatakkoord en Klimaattafels OF: Moet wat kan, moeten?

Gert Jan Kramer
VMR meeting, Amsterdam, 9 October 2018

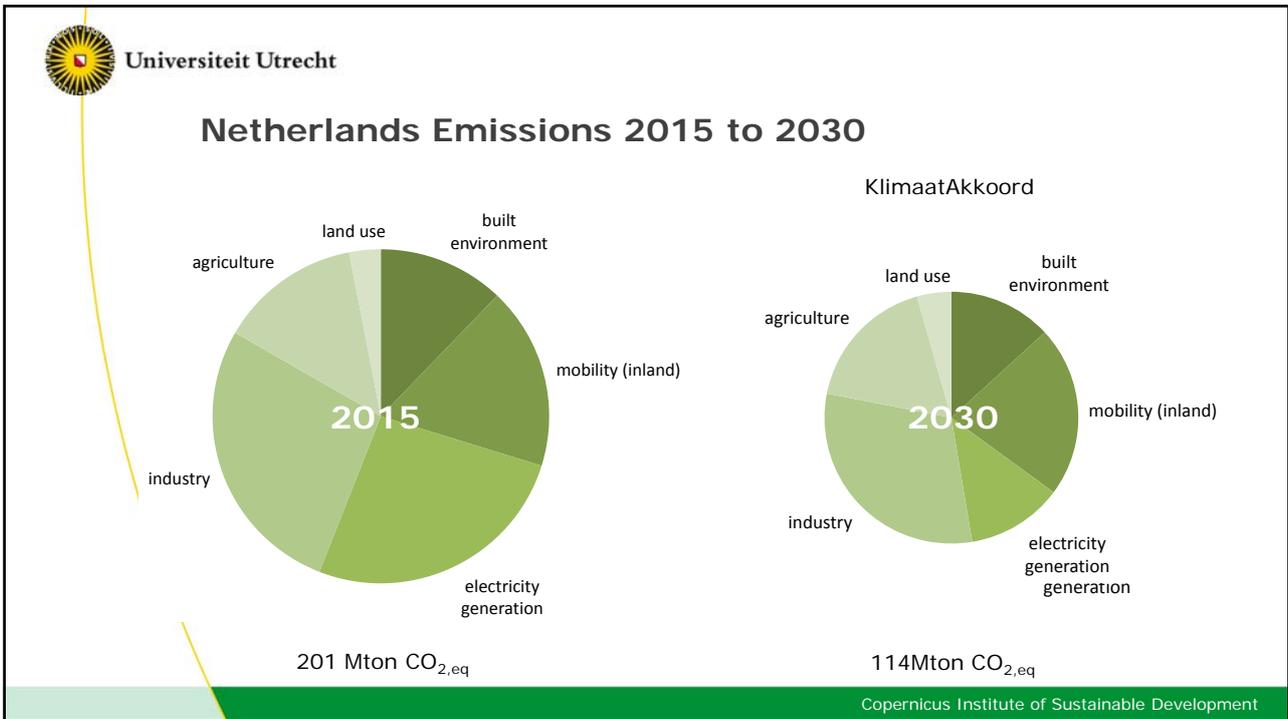
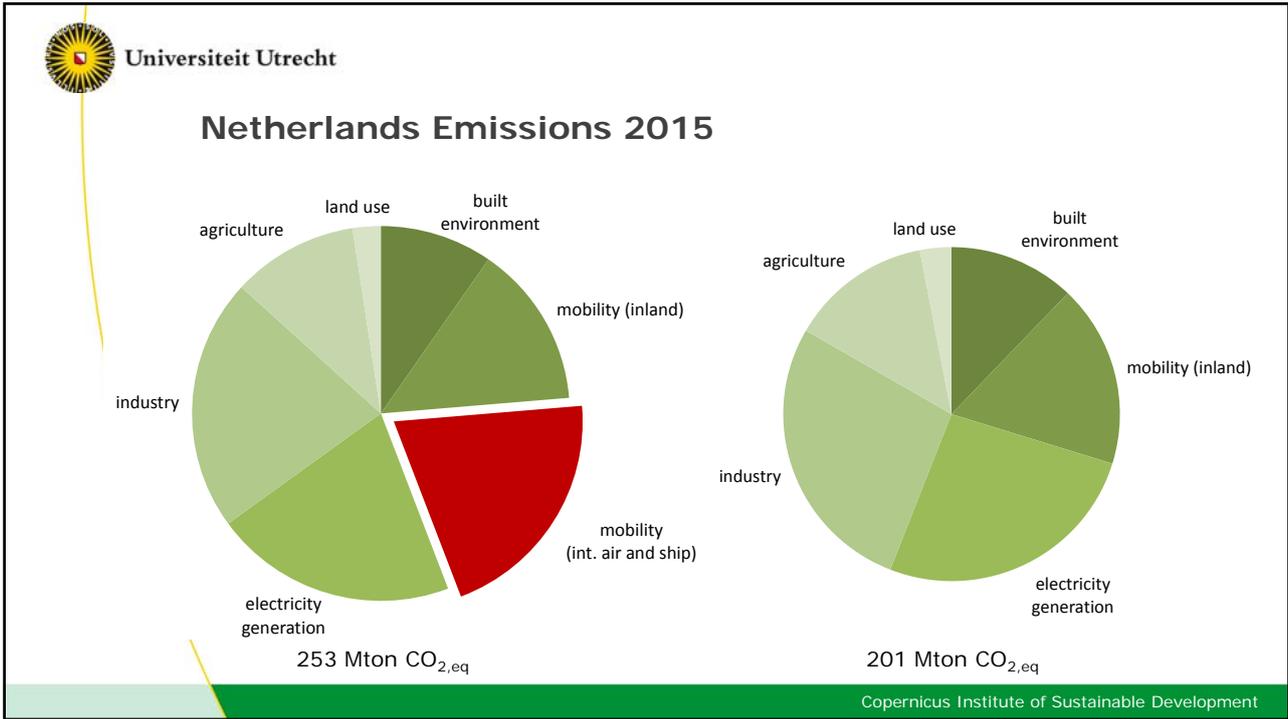


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Where are we headed? Energy and emissions



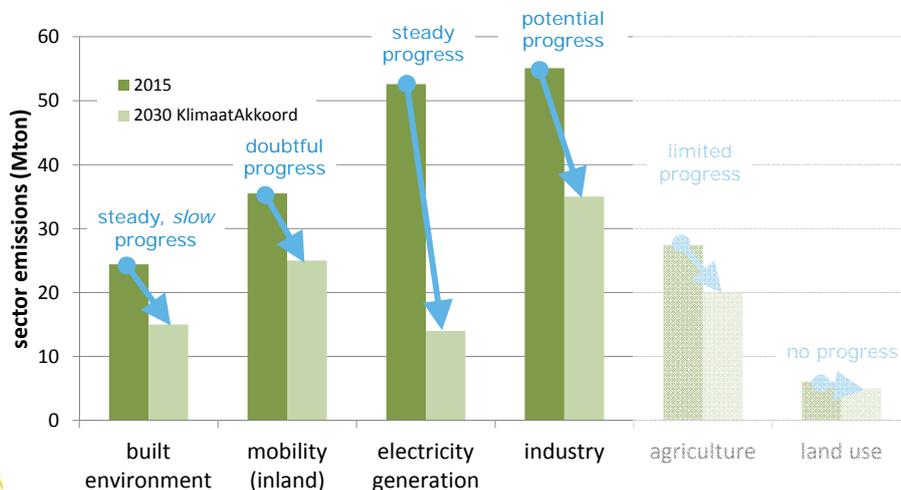
Source: Energy Transitions Commission, *Shaping Energy Transitions* (April 2016)





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To sum up (personal views)

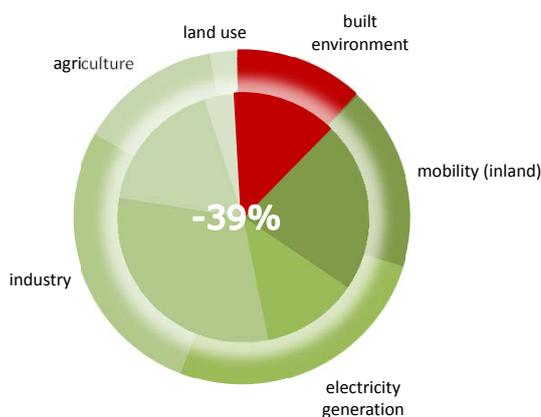


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The Built Environment



Technical options:

- deep insulation;
- electrification;
- district heating

Challenges:

- real-world performance
- workforce technical skills (MBO)
- co-ordination (city; neighborhood)

Legal/Regulatory:

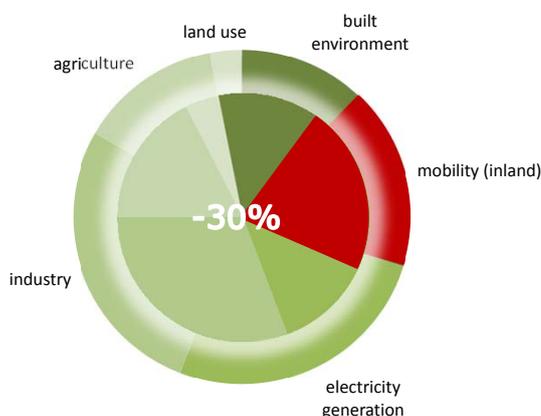
- discontinuation of gas?
- phasing: on ownership transfer (individual)? or linked to infra-upgrade (neighborhood)

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Mobility (inland): road passenger & freight, ship, rail



Technical options:

- electric cars (passenger cars);
- biofuels
- hydrogen

Non-technical options:

- volumebeleid/rekeningrijden;
- modal shift

Challenges:

- scope for growth of the technical options
- political acceptance of volume measures

Legal/Regulatory:

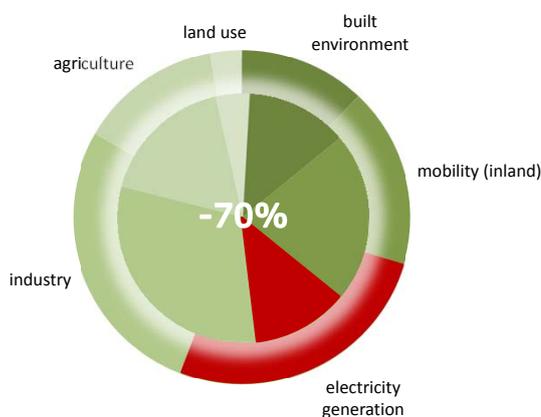
- EU (fleet-average) emission standards
- biofuels sustainability

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Electricity Generation



Technical options:

- generation: (offshore) Wind and Solar PV
- storage/demand mgmt: many, many

Challenge:

- keep the pace of PV and Wind deployment going
- incentivize storage and demand mgmt roll-out

Legal/Regulatory:

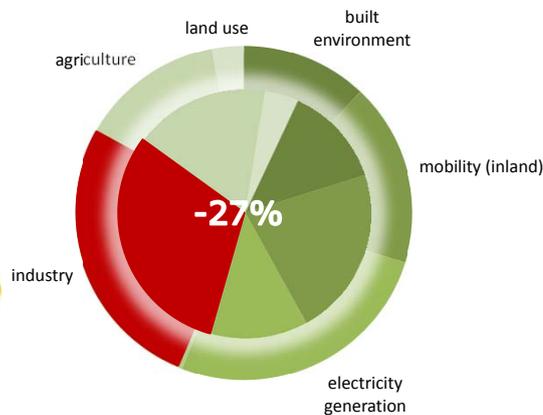
- the liberalized energy-only market may not be conducive to deliver the power-sector transition
- EU-level co-ordination
- tariff structure needs an overhaul
- illusion of "subsidievrij" (offshore wind) and underinvestment by TSO and DSOs

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Industry



Technical options and challenges:

- electrification (of industrial heat)
- CCS storage
- circularity; CCU utilization
- huge variety of the technical (im)possibilities

Non-technical challenges

- "brownfield" investment and redevelopment
- who pays?

"Other"

- "reinvent industry" (greenfield approach)

Legal/Regulatory:

- CO₂ pricing (national, EU and global)
- CCS Storage legal framework

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Overall, Governance/Political Challenges

The current paradigms on the role of the government, the political priorities and the *Realpolitik* assumptions on voter preferences

1. The private sector should deliver the transition (the government only facilitates)
2. Government should avoid picking winners
3. A uniform, high CO₂ price is not politically viable
4. The energy transition *should* offer a comparative economic advantage (as opposed to *might*)
5. People are unwilling to pay

1,2 and 3 are mutually incompatible

4 and 5 are simply unhelpful and induce kicking-the-can-down-the-road behaviour

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My Provocative Conclusion

There is a credible techno-economic path to net-zero emissions by 2050, but we presently lack the institutional capability to implement and deliver what is needed to get there

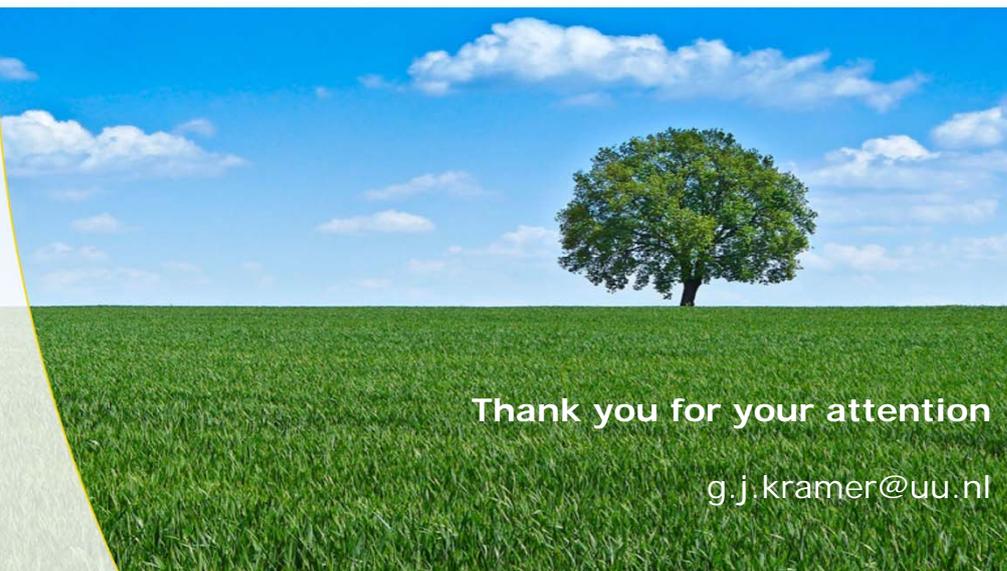
(we cannot see it will be done, even now that it can be done)

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Thank you for your attention

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