Ministry of the Interior and Kingdom Relations

The energy transition: challenges and policies for LT ready buildings

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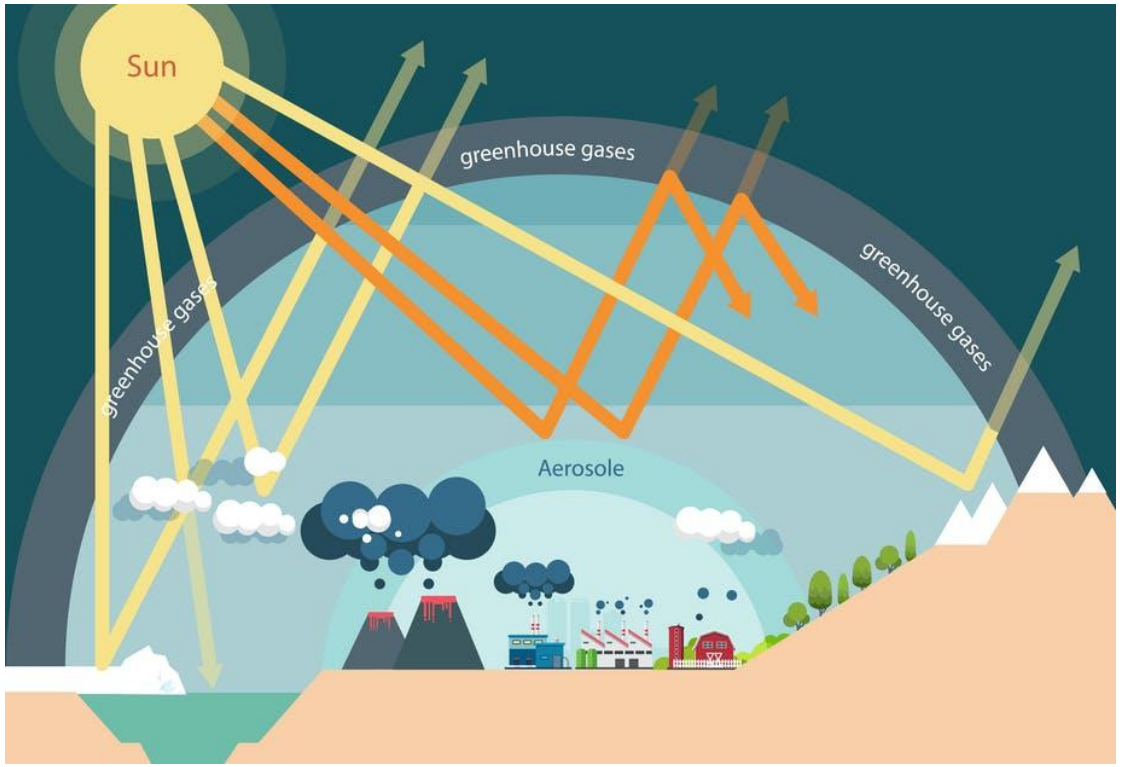
Why the energy transition?
Climate change

IPCC report 9 August 2021:

- By now Earth has warmed by 1,1°C
- Doubling CO_2 in atmosphere leads to 3°C rise in temperature
- The remaining carbon budget to remain below 1,5°C is 400 gigatonnes CO_2; for 2°C it is 1,150 gigatonnes CO_2.
- World emissions were 43 gigatonnes CO_2 in 2019, so without cutting emissions the carbon budget will be spent by 2030, to remain below 1,5°C
- After spending the carbon budget negative emissions are needed to achieve the 1,5 and 2°C goals.



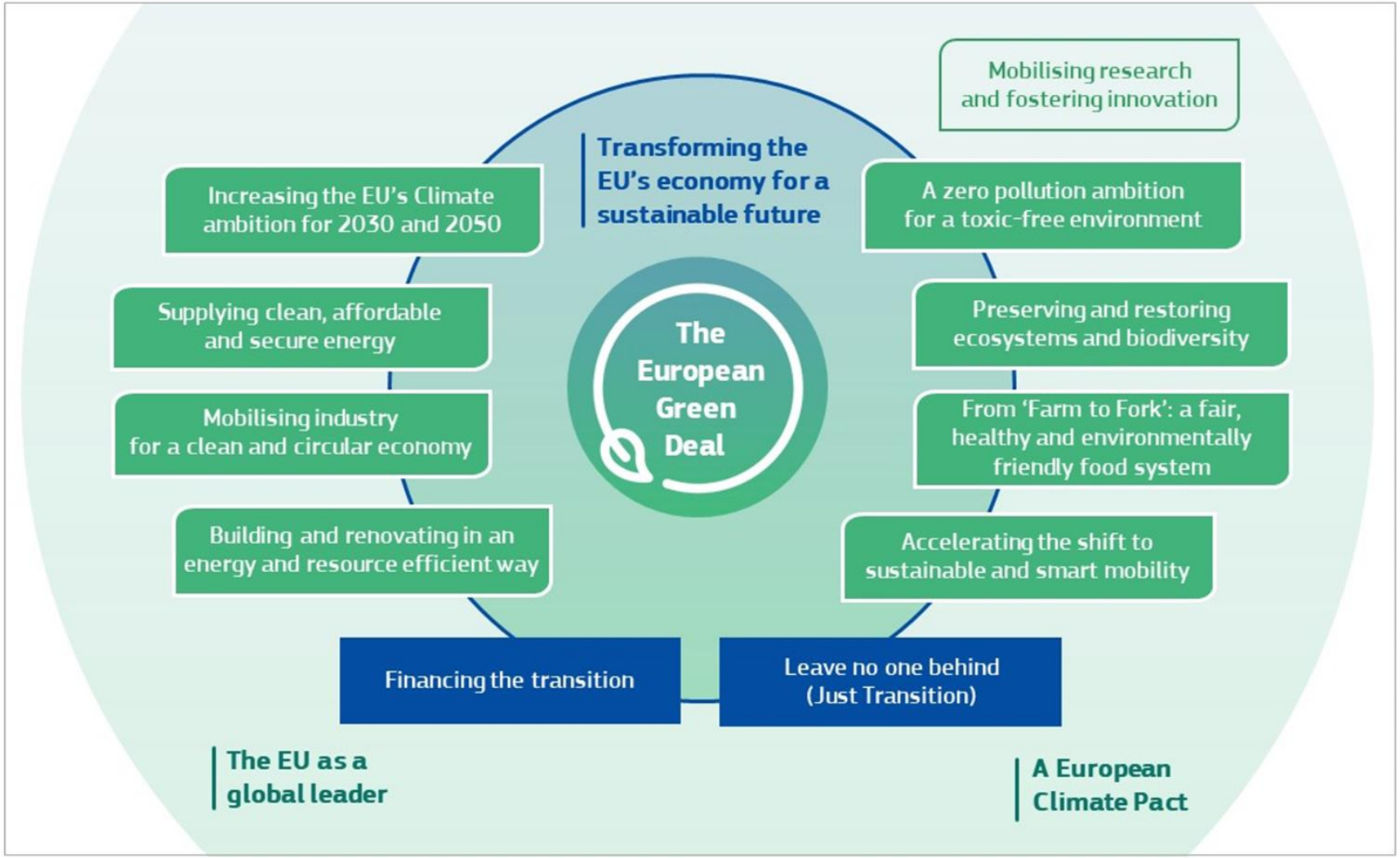
Other reasons to take action on the energy transition

- Less economic / geo-political dependence
- Lowering energy bill with rising prices
- Improving health and living environment

Bringing ambitious (inter)national goals to the level of individual households

European Green Deal

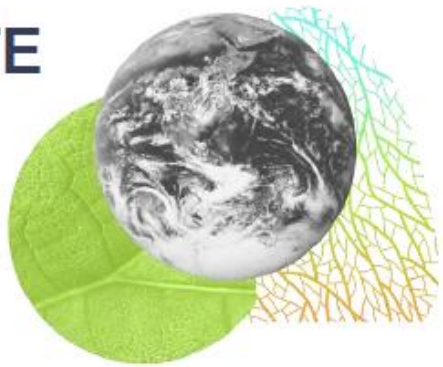
- 55% emissions reduction by 2030
- Climate neutrality by 2050



The built environment is responsible for approx. 30% of greenhouse gas emissions

Fit for 55

CLIMATE



- Revision of the EU Emissions Trading System, new ETS for buildings and transport
- Revision of the Effort Sharing Regulation
- Revision of the Regulation on Land use, Land use change and Forestry (LULUCF)

TRANSPORT

- Revision of the Alternative Fuels Infrastructure Directive
- ETS revision for aviation, & implementation of CORSIA
- NEW ReFuelEU Aviation Initiative
- NEW FuelEU Maritime Initiative

ENERGY

- Revision of CO2 emissions standards for cars and vans
- Revision of the Renewable Energy Directive
- Revision of the Energy Efficiency Directive

TAXATION AND TRADE

- Revision of the Energy Taxation Directive
- New Carbon Border Adjustment Mechanism

European Commission

An integrated and comprehensive package

Not complete yet. Forthcoming:

- Energy Performance of Buildings Directive (EPBD)
- Construction Products Regulation (CPR)
- Ecodesign Regulation

The challenge for the built environment

No fossil-fuel heated buildings in a climate neutral country

- Renovation
- Energy efficiency
- Renewable energy
- Circular and biobased

- From 22 MTon emissions in the built environment now to 13/14 MTon in 2030, to net zero in 2050

The Dutch built environment

- 7.9 million homes and 0.6 million non-residential buildings (production halls, offices, shops etc.)
- 89.5% of households have individual heating system based on natural gas; only 6% district heating (460.000 homes)
- 85-95% of current building stock will still be in use in 2050
- Demand for 0,8 million additional homes by 2030

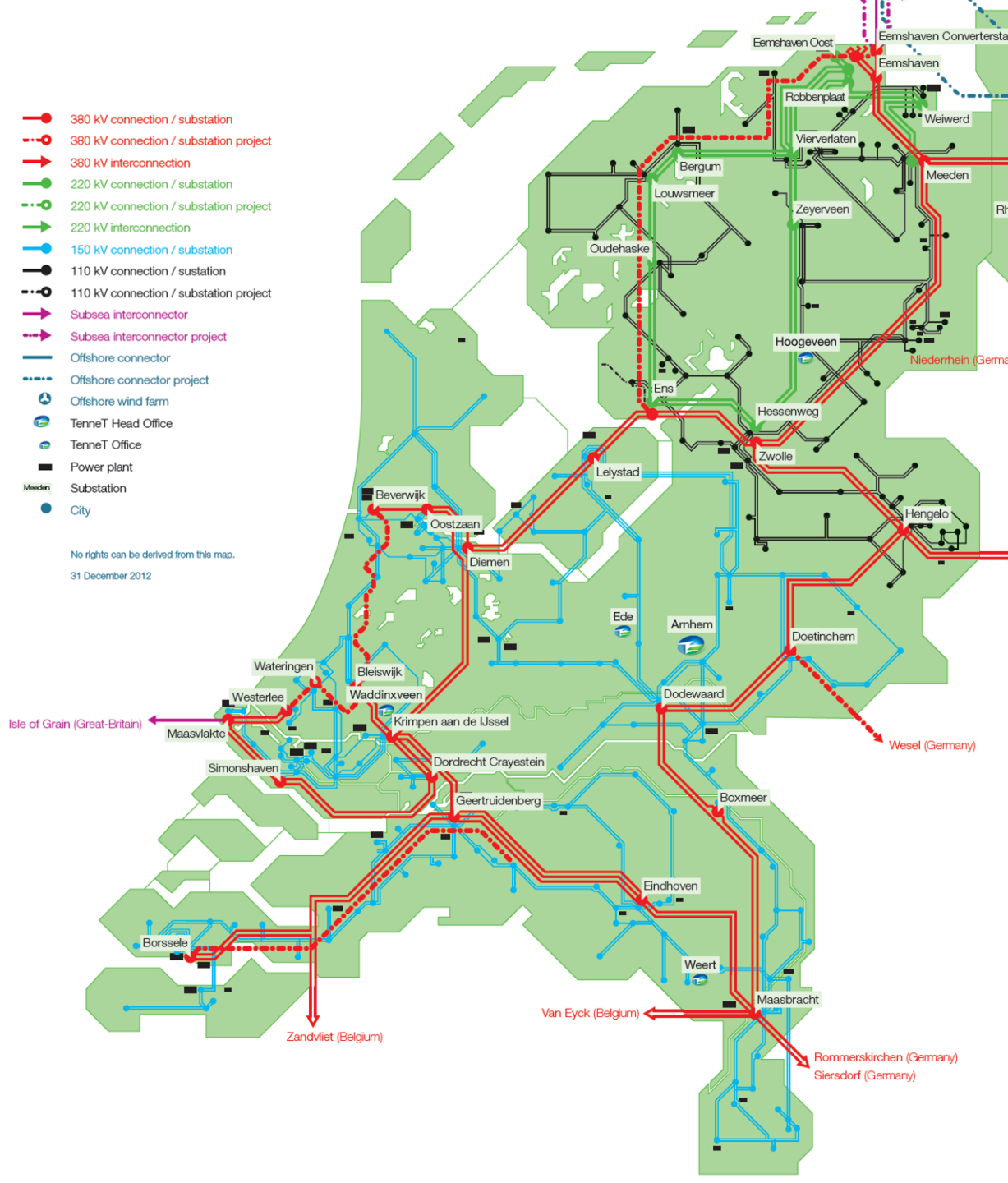
How to cut emissions in the built environment?

- A two track approach:
  - *Individual* (targeting home owners with information, subsidies and loans, pricing, norms, standards and regulations)
  - *District oriented* (by municipalities through Heat Transition Visions and Regional Energy Strategies)
- One future ready insulation standard: 'LT ready'
- Scale is needed for cost reduction, also in the individual approach

Why ‘LT ready’ buildings?

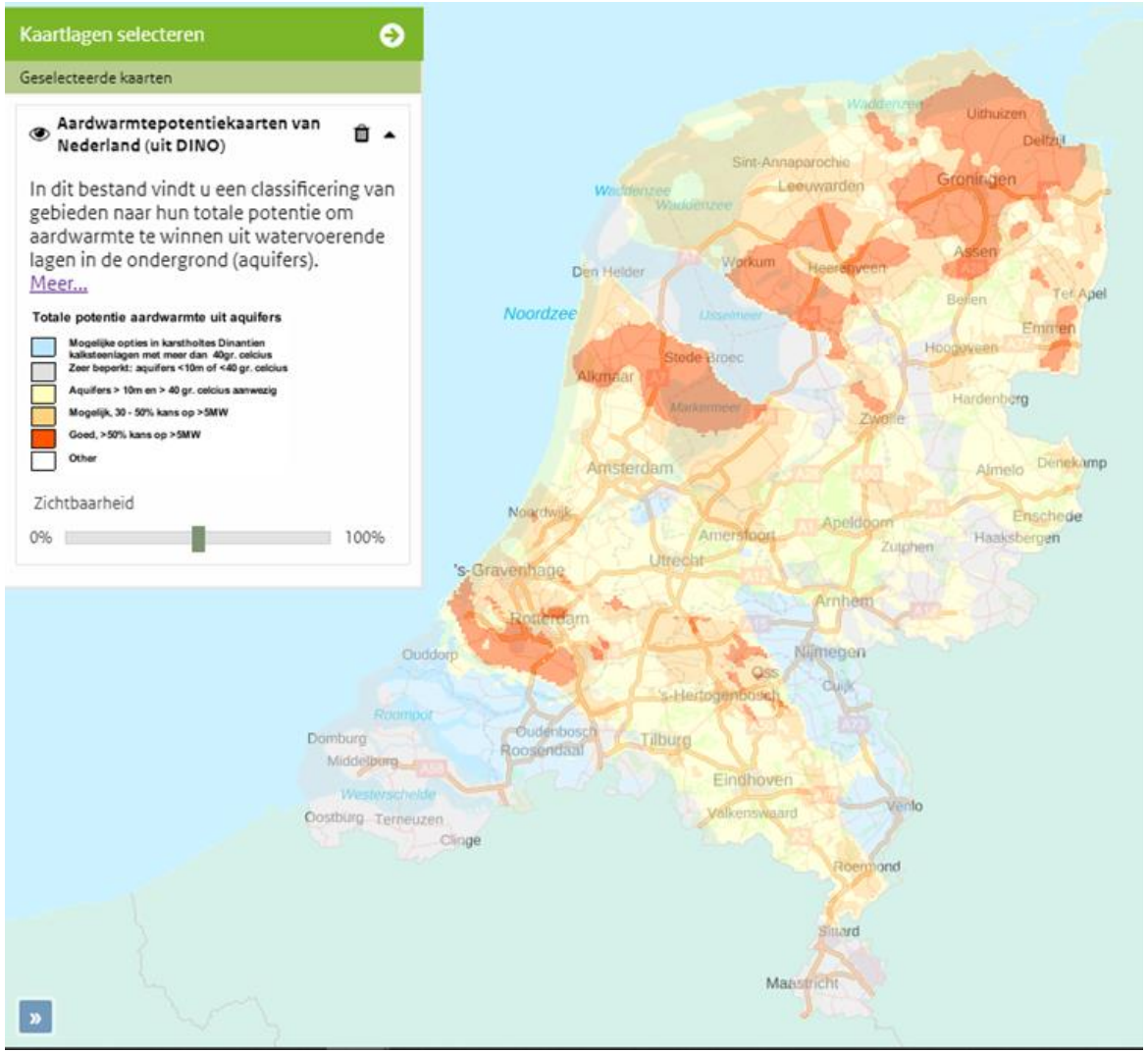
- Necessary to use different heat sources

  (all electric, aquathermal energy, geothermal energy, residual heat from industry etc.)
- Energy efficiency to lower demand
- Standardize demand for cost reduction



Why LT ready (2)

No building or district is the same



Potential for geothermal energy

Challenges

J.F. Kennedy's moonshot was easy, compared to what we face

- No building is the same, but large scale renovation is required
- How to make the energy transition affordable? 'Housing cost neutrality'?
- Participation: how to get and keep everyone on board; home owners, tenants, business, public sector, financiers, academia?
- Labour shortages in the construction sector: need for industrialization, digitalization, robotization to increase productivity
- Integrating international, national and local instruments and efforts
- Linking the energy transition to other challenges: climate change adaptation, living environment, mobility, biodiversity, socio-economic development
- Mindset: not a competition against each other, but against time