



Ministry of the Interior and
Kingdom Relations

Policies and goals for the Energy Transition of the Built Environment

*With a focus on
technical options and measures*

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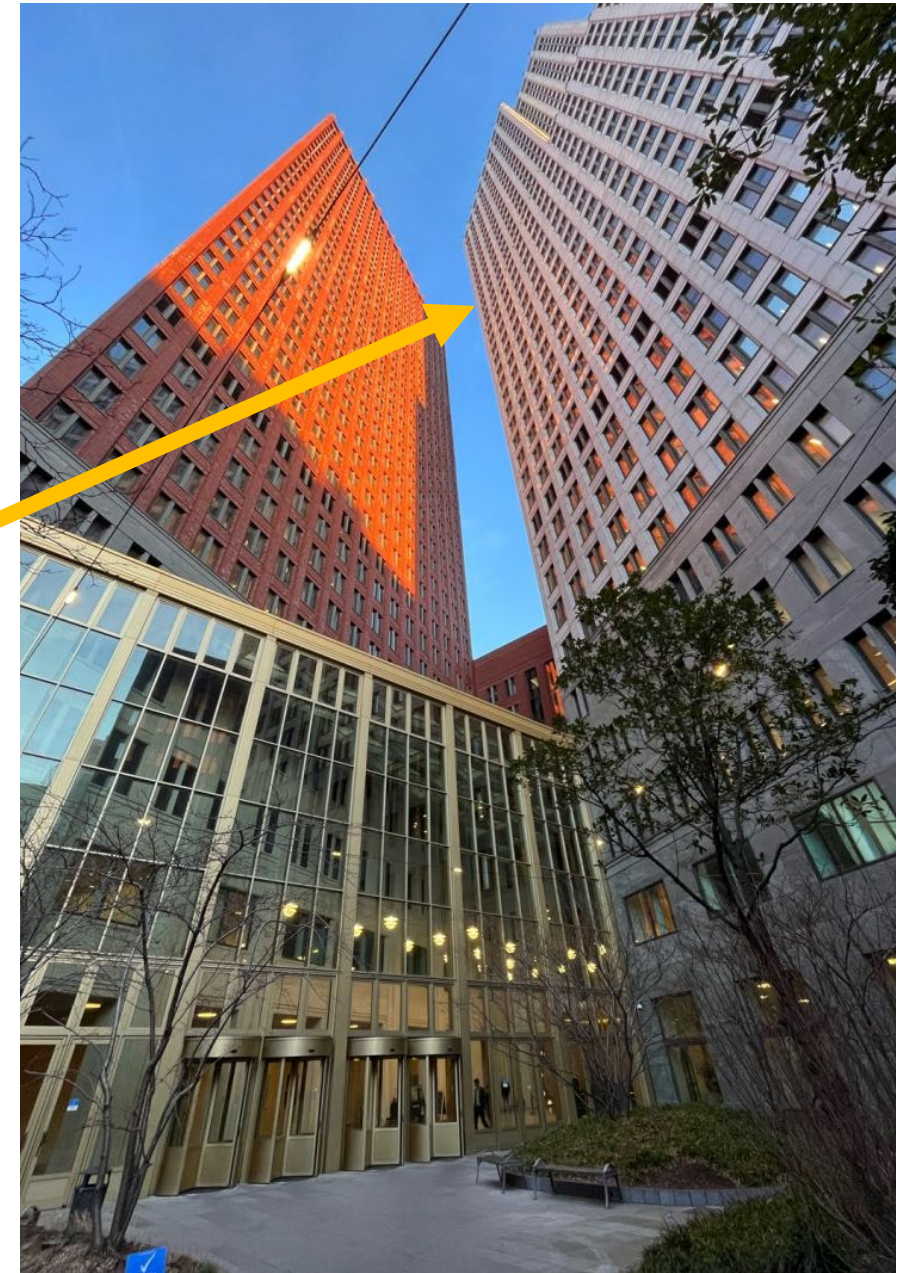
Topics

- > Introduction
- > PVGO
- > NPE



Introduction

- › Ministry of the Interior and Kingdom Relations
 - **DG Building and Housing**
(DG Volkshuisvesting en Bouwen)
 - **Department of Building and Energy**
 - Energy transition of existing building
 - Climate adaptation, circularity/ biobased
 - Building regulations and energy performance standards





Ambition - introduction

DUTCH CLIMATE AGREEMENT (2019)

- › 49% CO₂-reduction in 2030 (vs. 1990): nationwide and for the built environment as a sector
- › Goals, policies and cooperation agreement.
5 sectoral plans
 - Industry, Built environment, Mobility, Agriculture, Energy sector
- › Result of >year of negotiations between government and stakeholders

DUTCH COALITION AGREEMENT (2021)

- › Updated goals and policies, to reflect new EU goals and lessons learned
- › 55%-60% CO₂-reduction in 2030 (vs. 1990).
- › 67% emission reduction in the built environment (including 2,9 Mton from green gas)
- › **New goal spring 2023:**
13,2 Mton remaining emissions

Targets

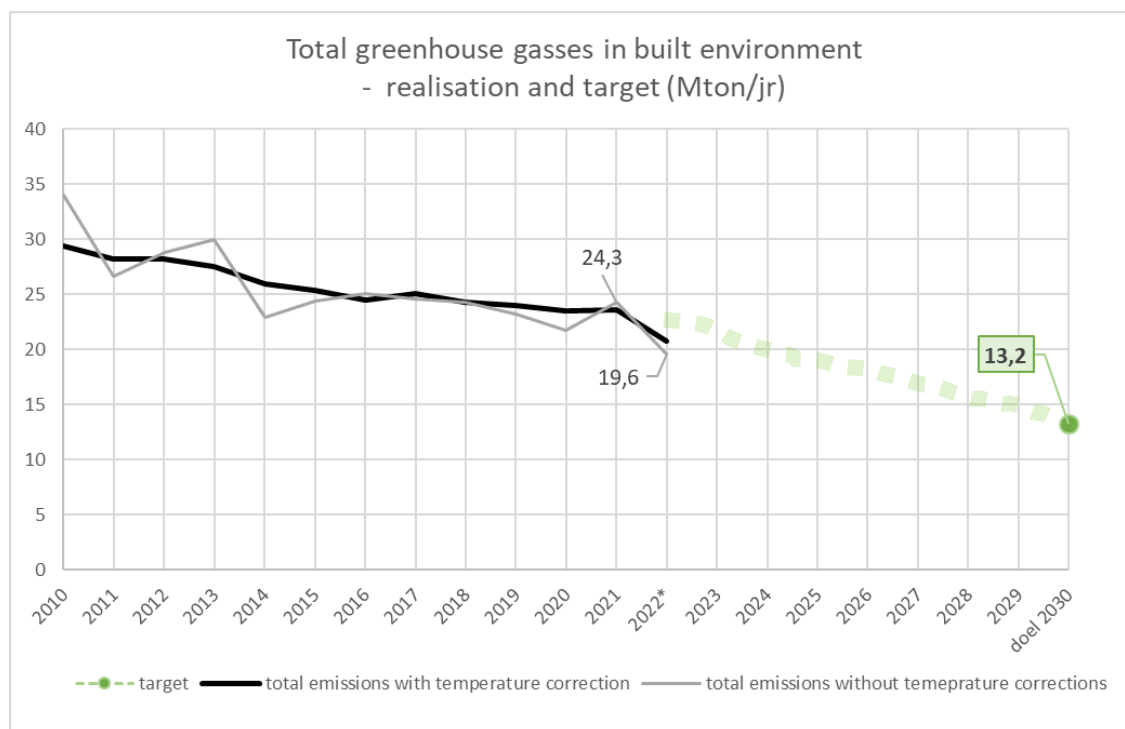


2030 EMISSION REDUCTION TARGET

ENERGY EFFICIENCY TARGET

(ENERGY EFFICIENCY DIRECTIVE - EED)

- > The revised Energy Efficiency Directive (EU/2023/1791), published in the Official Journal on 20 September 2023, significantly raises the **EU's ambition on energy efficiency**.



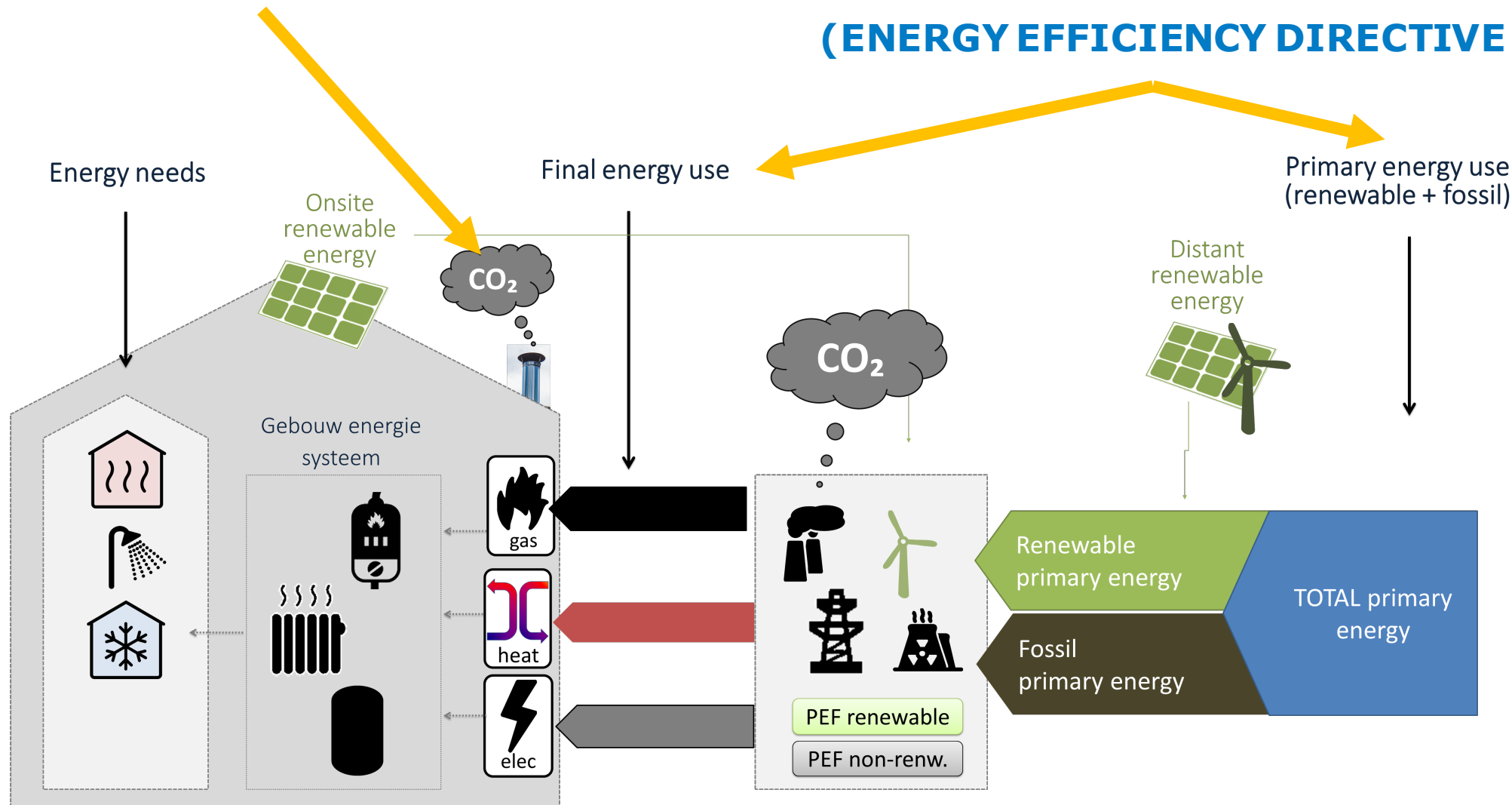
Updated figures with new CBS data on
realisation 2022 and new target
according to 'voorjaarsbesluitvorming'

Targets



2030 EMISSION REDUCTION TARGET

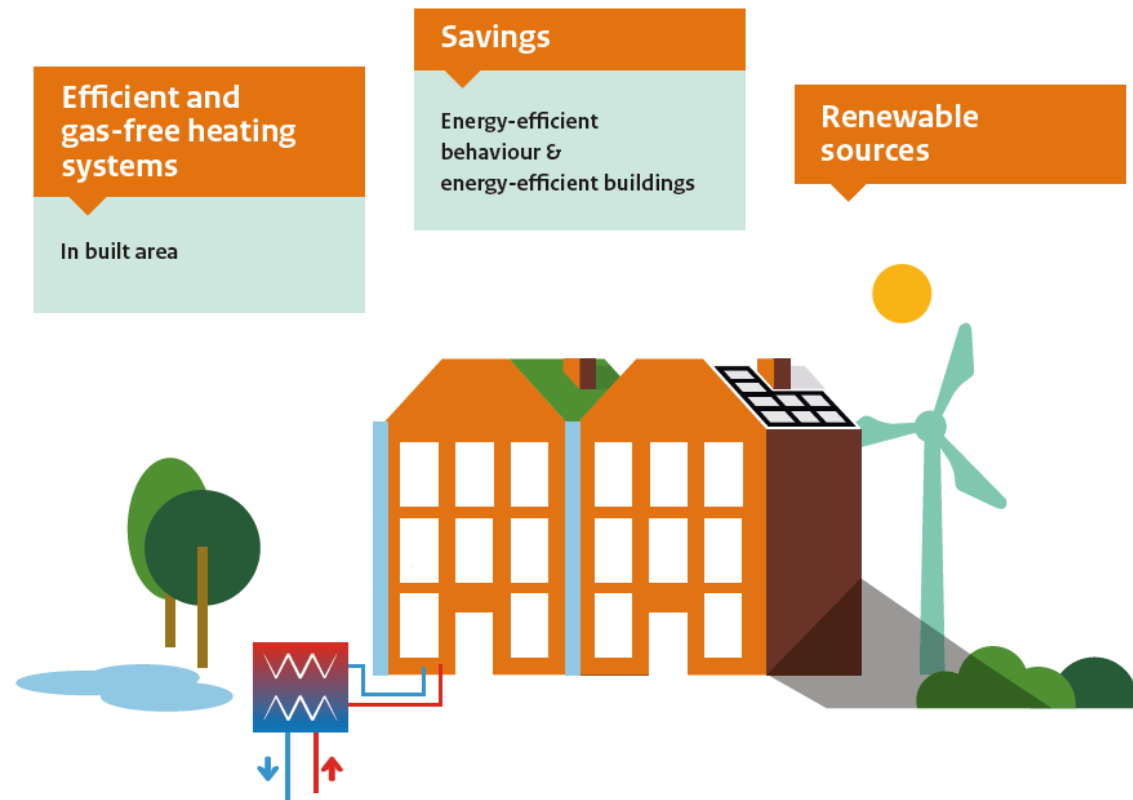
ENERGY EFFICIENCY TARGET (ENERGY EFFICIENCY DIRECTIVE - EED)





Sustainability Measures in the Built Environment Acceleration Programme (Programma Versnelling Verduurzaming Gebouwde Omgeving - PVGO)

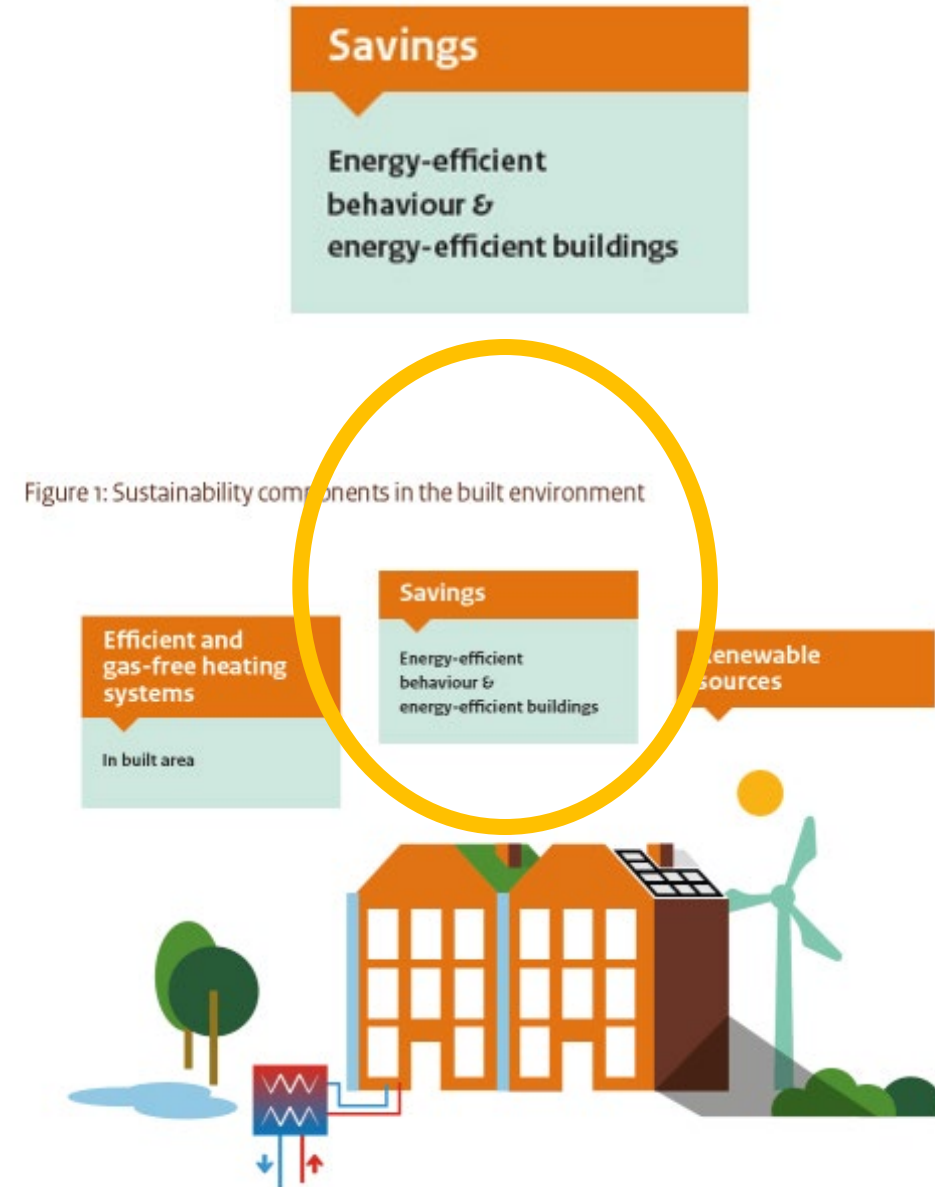
Figure 1: Sustainability components in the built environment

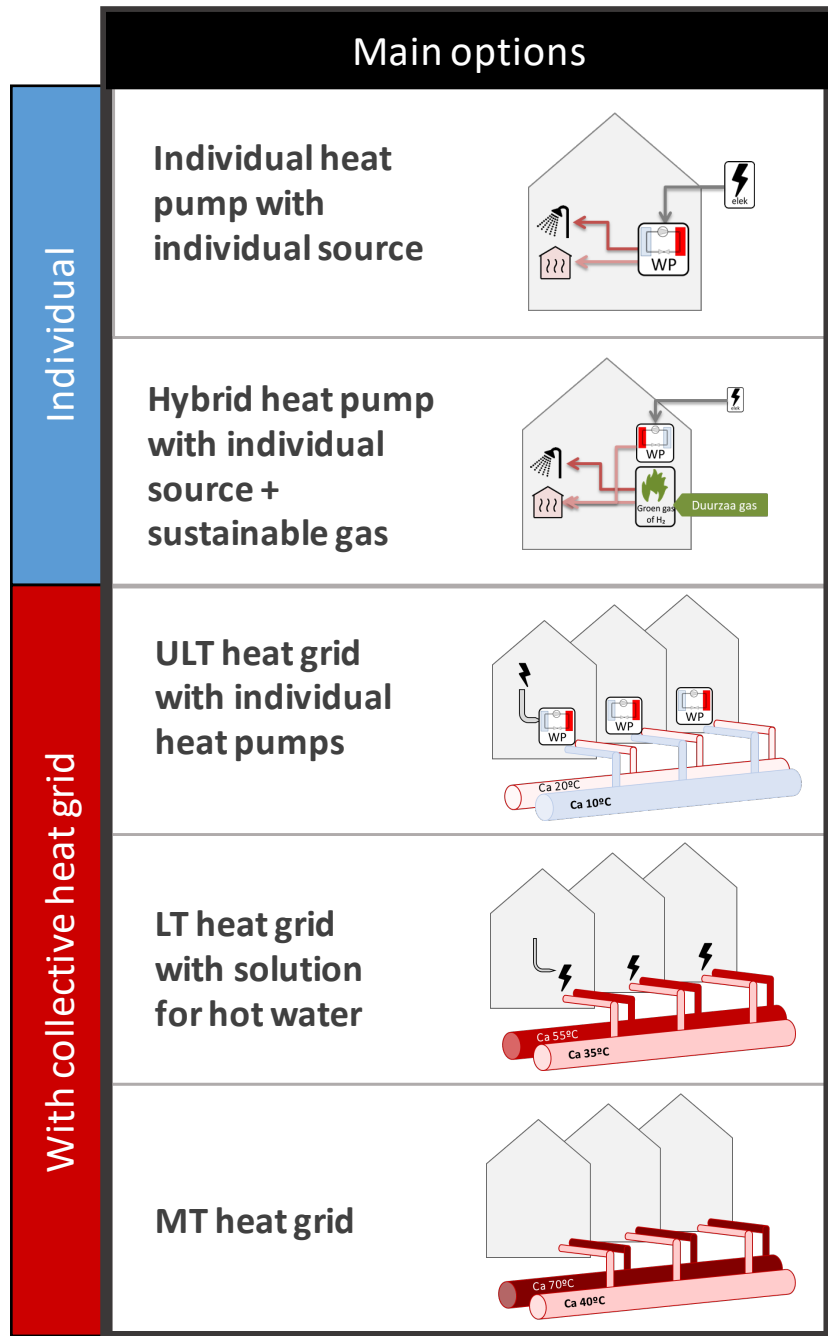




Energy saving:

- **Energy-efficient behaviour**
 - **Optimising existing installations**
 - **Energy efficient buildings**
 - Insulation
 - 'Standaard voor woningisolatie (2021)
Guiding norm for the maximum net heat demand of a dwelling after renovation:
in kWh(th)/m²/year
- <https://www.rijksoverheid.nl/actueel/nieuws/2021/03/18/standaard-voor-woningisolatie>
- Energy efficient ventilation





Efficient and gas-free heating systems

Figure 1: Sustainability components in the built environment

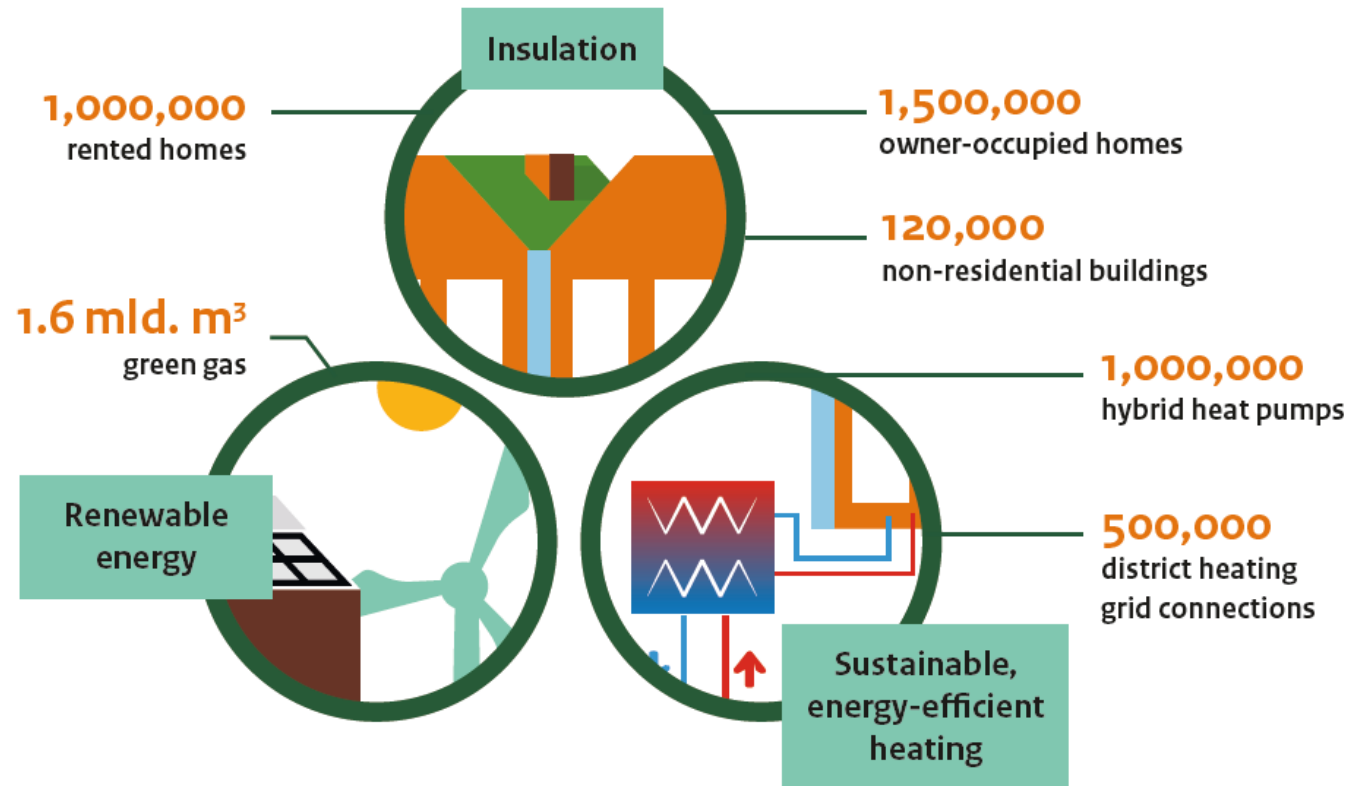


Different technical options for heating

Main options		Variants for individual heat pumps		
Individual	Individual heat pump with individual source	<div> <div>Air source</div> <div>BTES (borehole thermal energy)</div> <div>Solar thermal (PVT)</div> </div>		
	Hybrid heat pump with individual source + sustainable gas	<div> <div>Sustainable gas:</div> <div>By 2050 the gas will be either green gas or hydrogen, but currently this is not yet a question for municipalities, as green gas is fed into the grid and not specifically for 1 neighbourhood, and hydrogen is not yet available in general (only the two pilot neighbourhoods are working on this)</div> </div>		
		Variants for heat grids based on the heat source		
With collective heat grid	ULT heat grid with individual heat pumps			<div>ZLT warmtebron (evt + WKO)</div>
	LT heat grid with solution for hot water		<div>LT warmte + collectieve LT-WP</div>	<div>ZLT warmte + collectieve LT-WP</div>
	MT heat grid	<div>MT warmtebron (~70°C)</div>	<div>LT warmte + collectieve MT-WP</div>	<div>ZLT warmte + collectieve MT-WP</div>



Targeted technical measures

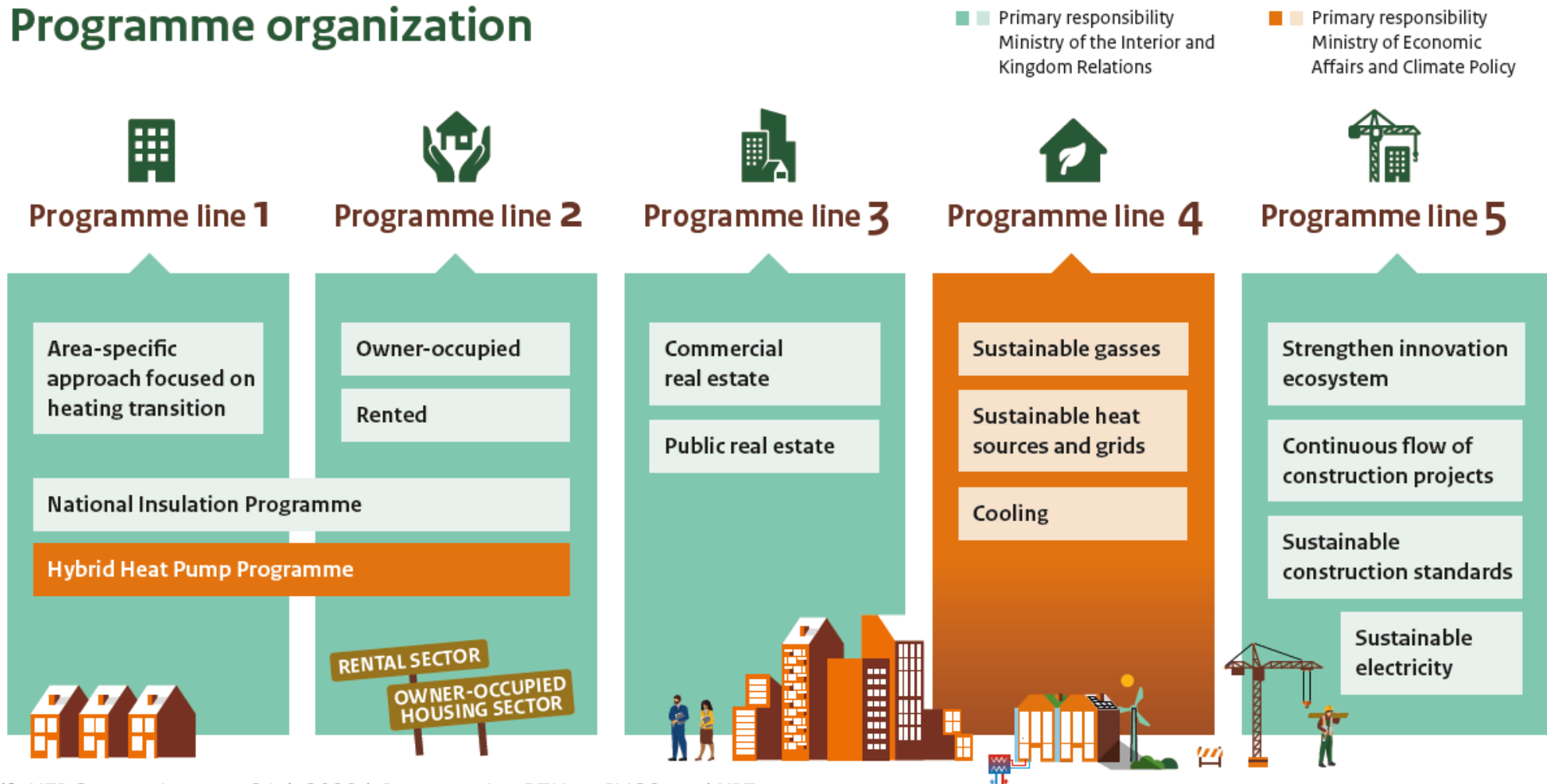


+ already existing target of
1,5 million homes within the district approach



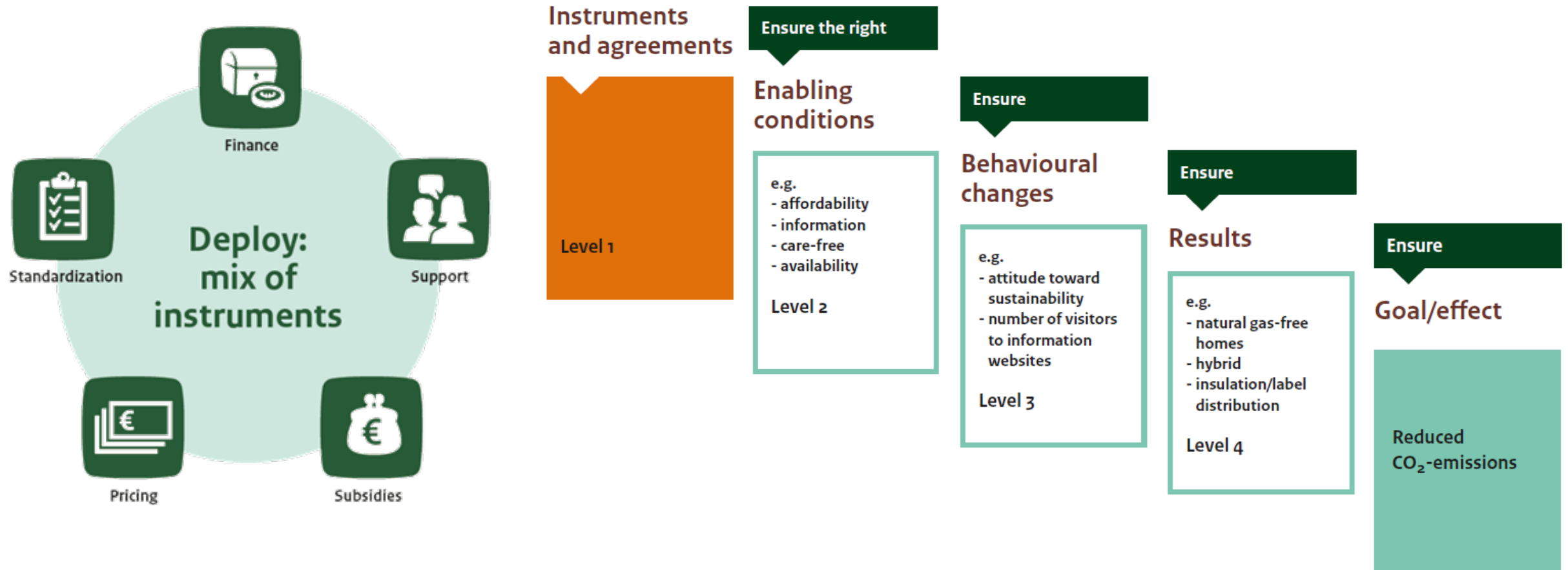
Programme organisation

Programme organization



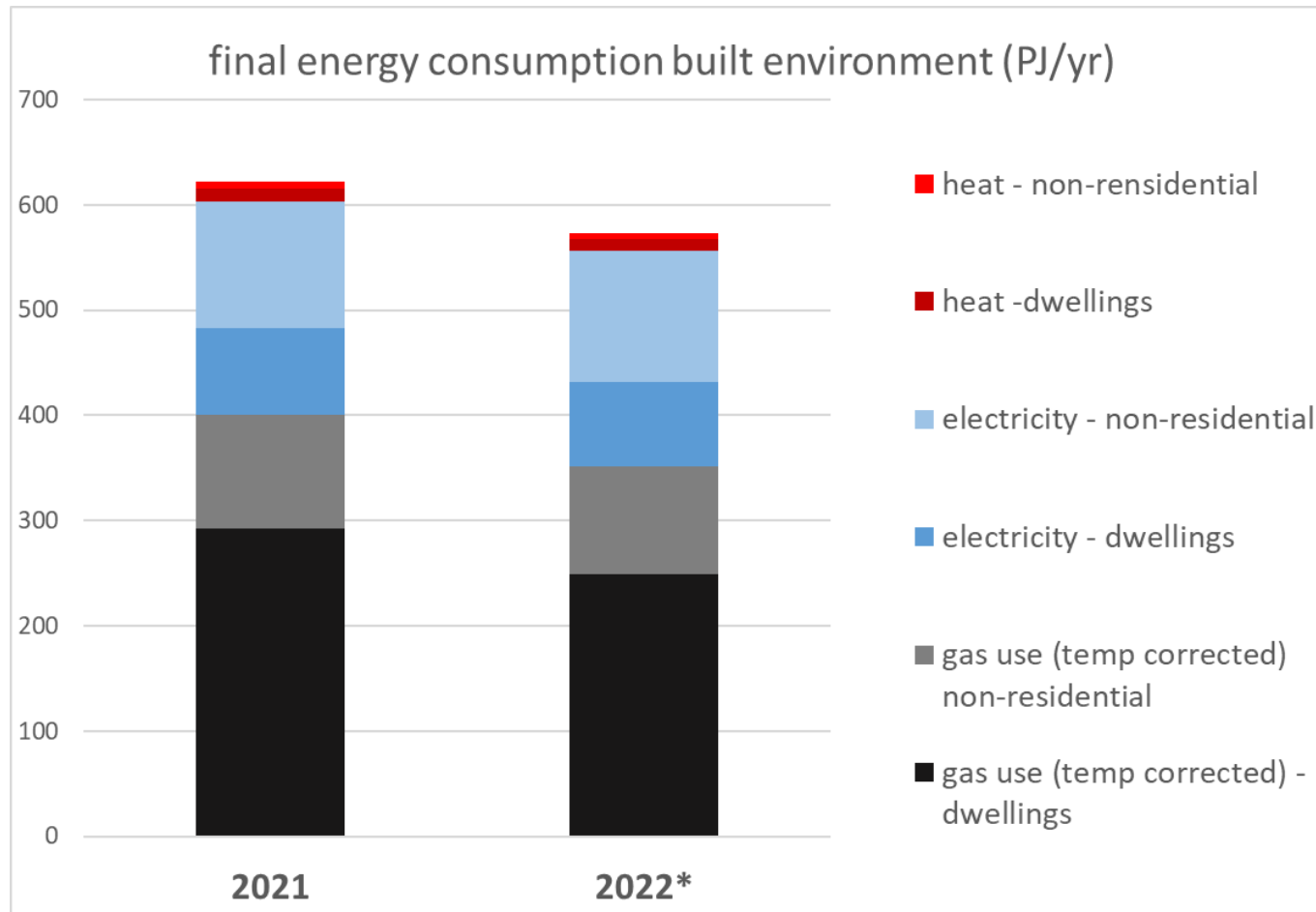


From policy instruments to realisation





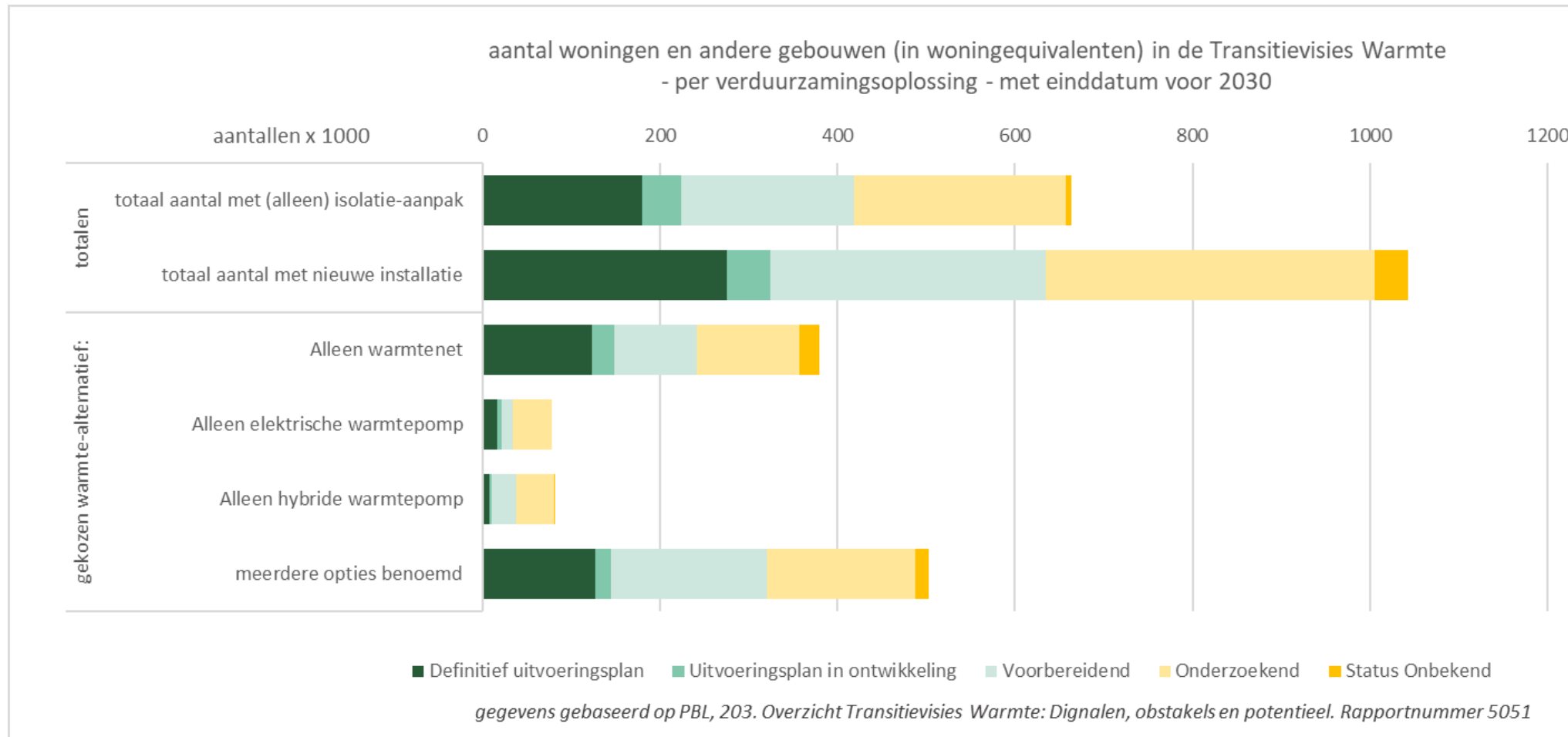
Energy use in 2021 and 2022



- Strong reduction of gas consumption
 - Prices
 - Energy poverty?
- Strong increase in heat pumps (ca + 50.000 in existing buildings)
- Very small increase in district heating connections



PBL evaluation of energy transition plans



PAW Programma
Aardgasvrije
Wijken



Now part of interdepartmental
Programme **NPLW**: National
Programme Local Energy Transition

For all municipalities

NPLW Nationaal
Programma
Lokale Warmtetransitie

Interdepartmental learning programme:

- 66 pilot neighbourhoods with different technologies and different approaches



[Proeftuinen op de kaart - Programma Aardgasvrije Wijken](#)



Nationaal Plan Energiesysteem

The National Plan for the Energy System (NPE) is the government's draft vision of the energy system's projected development up to 2050.

July 3rd 2023 → concept

July-sept 2023 → feedback

December 2023

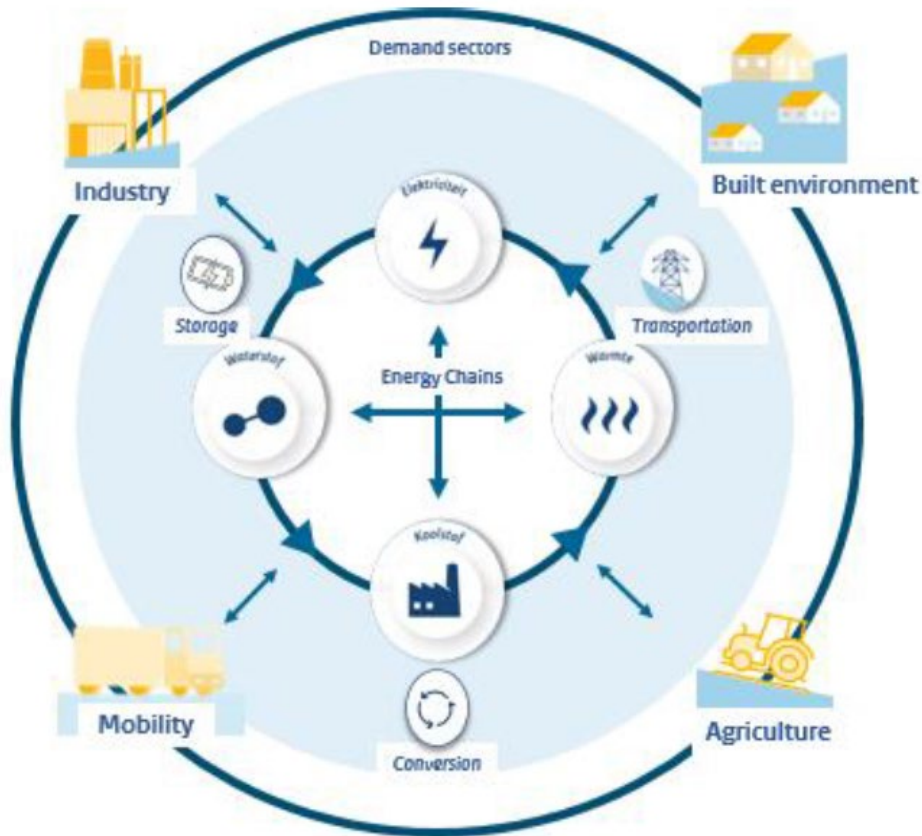
→ final version



<https://www.rijksoverheid.nl/documenten/rapporten/2023/07/03/bijlage-1-hoofddocument-concept-npe>



Nationaal Plan for the Energy System



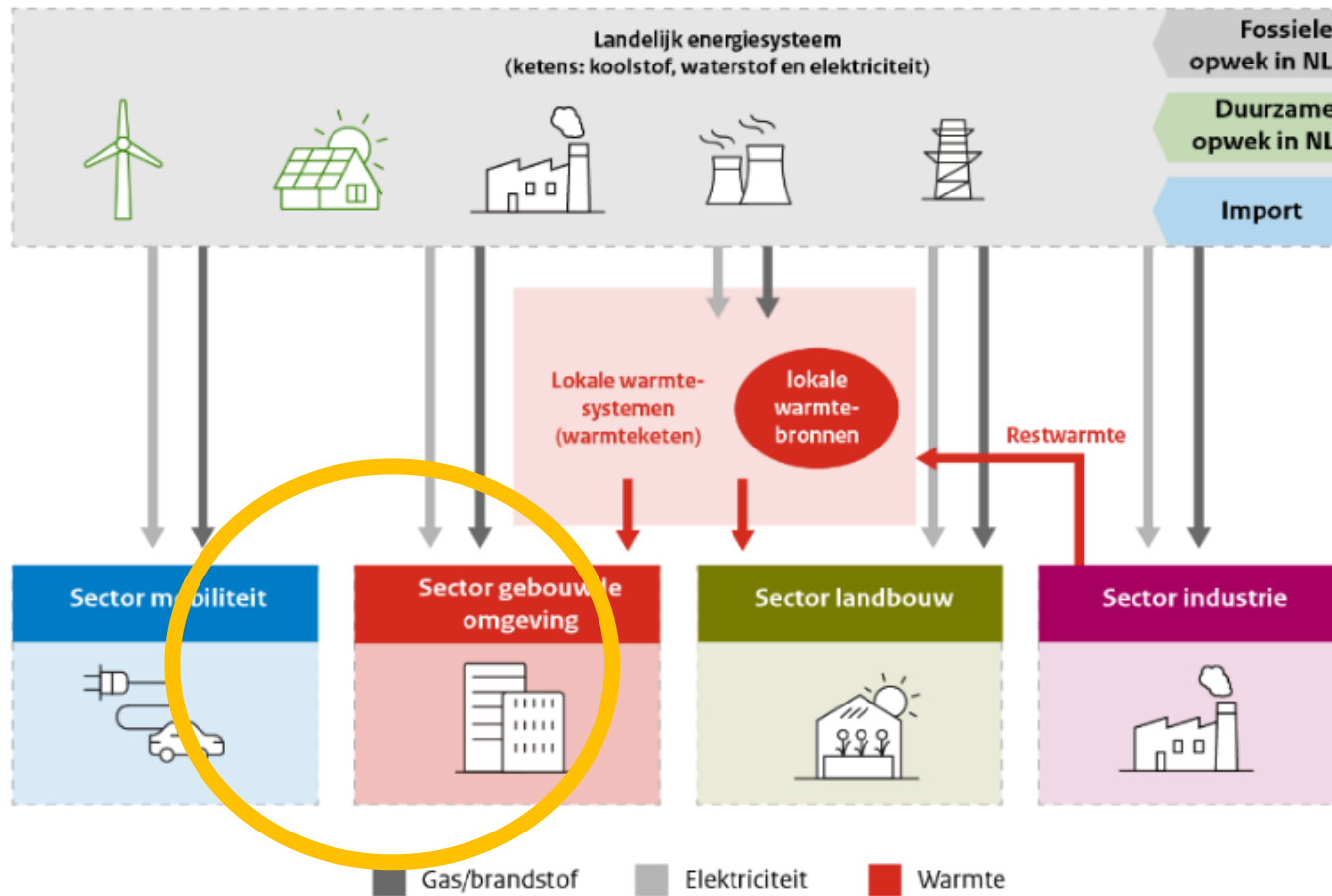
- Energy carriers
 - Electricity
 - Carbon- (for fuels and feedstock)
 - Hydrogen
 - Heat
- Demand sectors
 - Built Environment
 - Agriculture
 - Mobility
 - Industry



NPE - 5 key decisions

- **Maximum supply**
 - Maximum commitment to the supply of renewable energy and to the energy infrastructure
- **Energy conservation**
 - Conservation as the lynchpin of energy policy
- **Allocation in times of scarcity**
 - Scarce energy and limited infrastructure will be used where they are most needed, from a system perspective
- **International collaboration**
 - Robust international collaboration and a fully interconnected energy system
- **Joint coordination**
 - With members of the public and companies, with ample scope for participation and initiative

NPE - Built environment

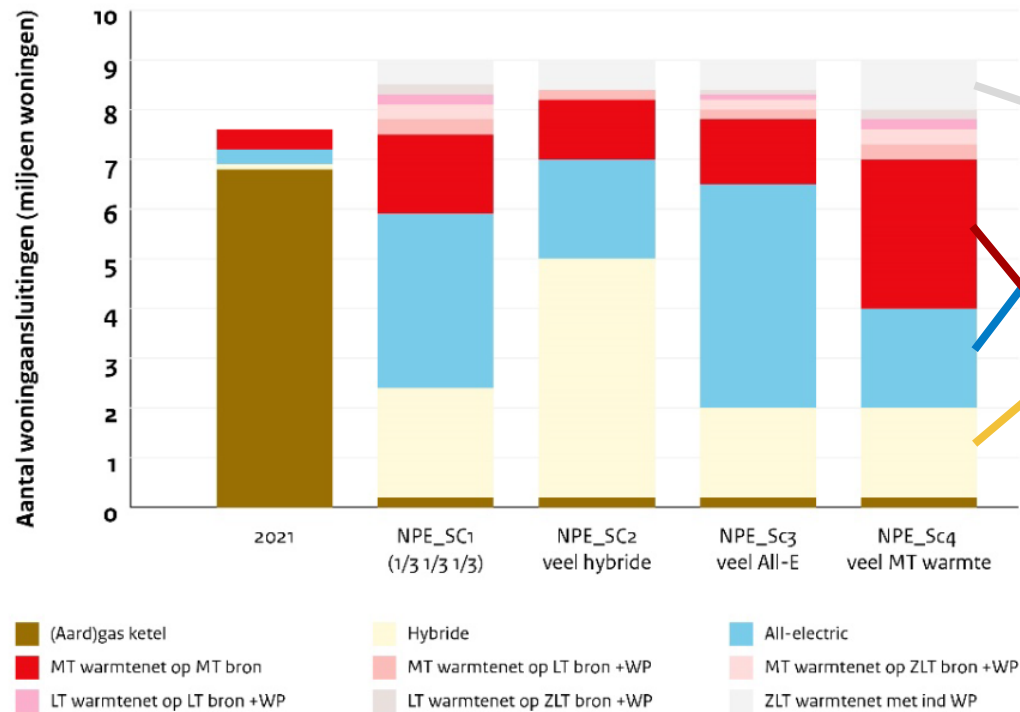


Figuur 1 Schematische weergave van de relatie tussen de sectoren en de energieketens.

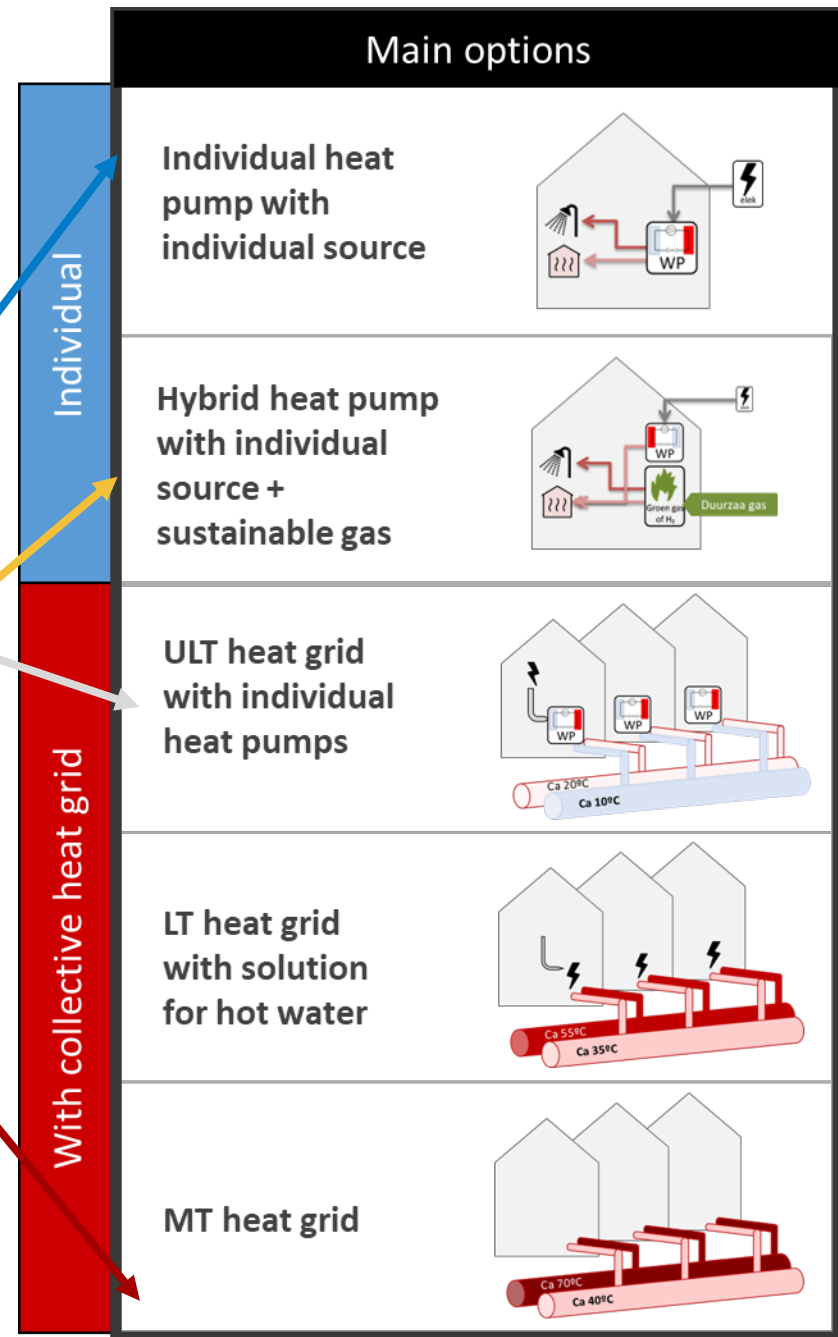


NPE - Built environment

Scenario's: # million dwellings per technology



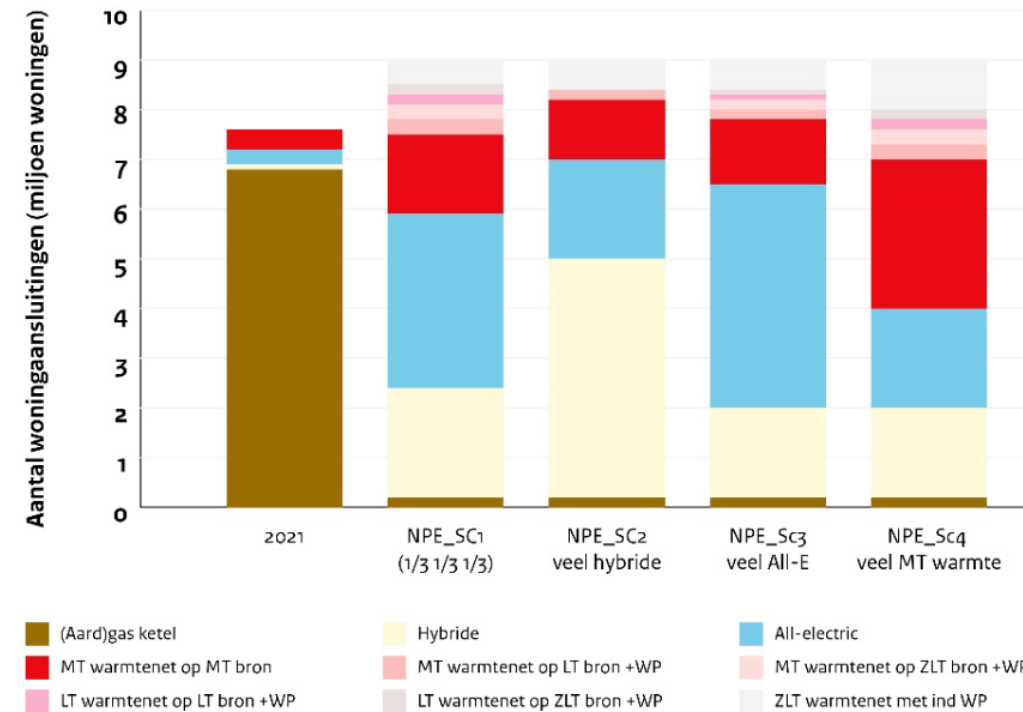
Figuur 7. Scenario's warmtealternatieven - Aantal woningaansluitingen. (Let op: het uitgangspunt voor 2050 is dat er 9 miljoen bewoonde woningen zijn. In 2021 waren er circa 8 miljoen woningen, waarvan 7,5 miljoen bewoonde woningen. De onbewoonde woningen worden niet meegenomen in de berekening omdat die geen energie gebruiken).



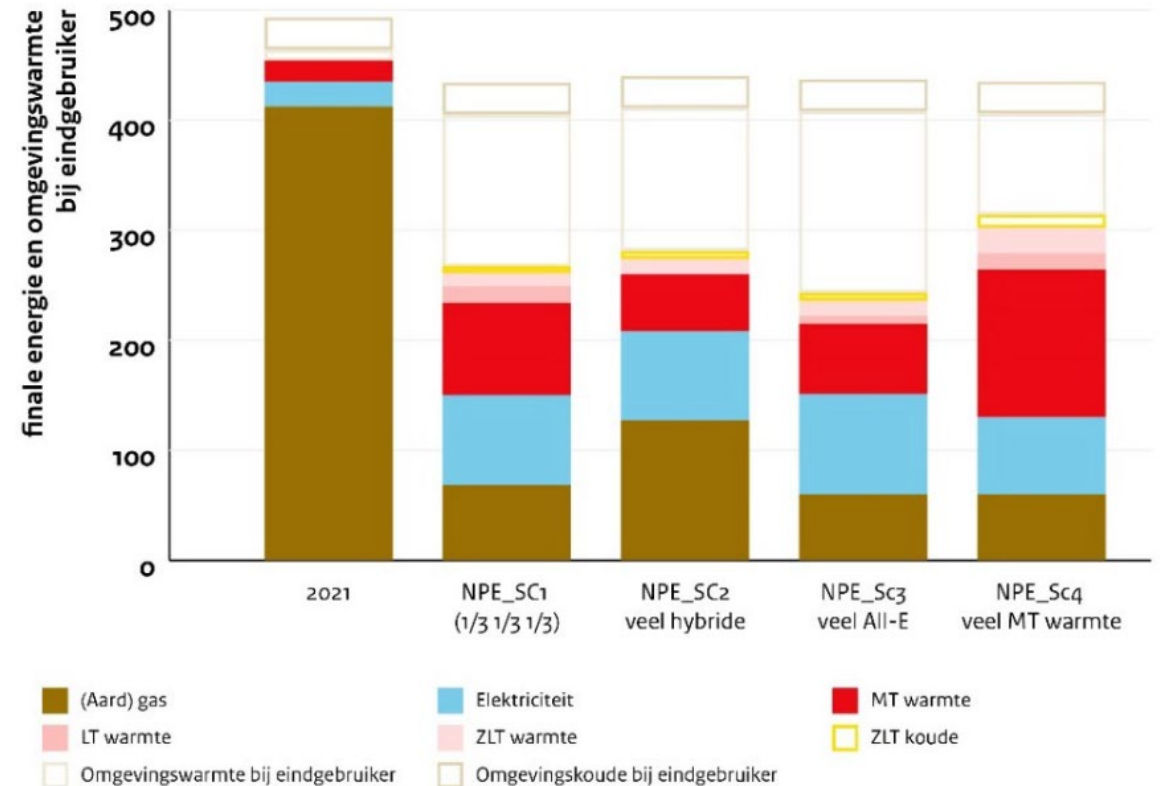


NPE - Built environment

Scenario's: # million dwellings per technology



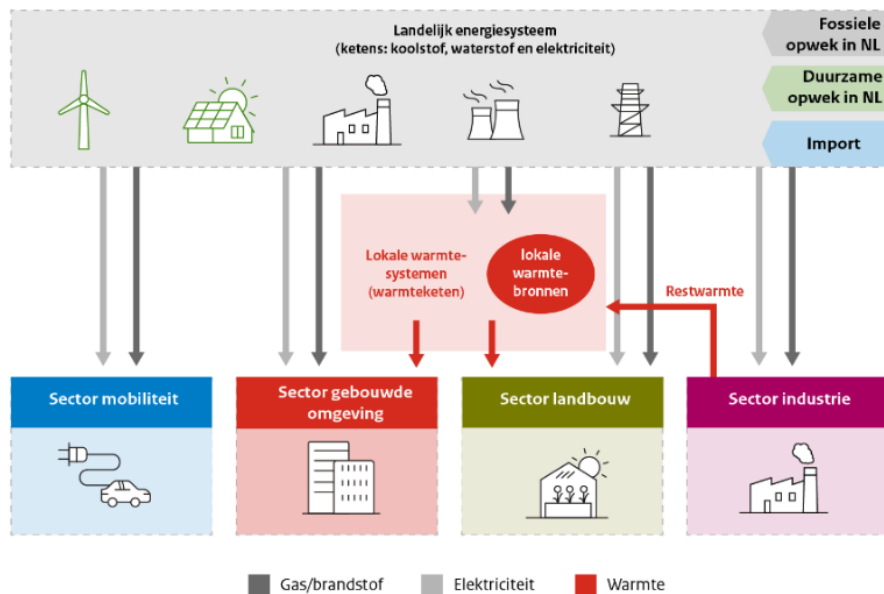
Final energy per scenario (incl. nonresidential)



Figuur 7. Scenario's warmtealternatieven - Aantal woningaansluitingen. (Let op: het uitgangspunt voor 2050 is dat er 9 miljoen bewoonde woningen zijn. In 2021 waren er circa 8 miljoen woningen, waarvan 7,5 miljoen bewoonde woningen. De onbewoonde woningen worden niet meegenomen in de berekening omdat die geen energie gebruiken).



NPE – Guiding directions for the built environment



Figuur 1 Schematische weergave van de relatie tussen de sectoren en de energieketens.

- **Consider energy system impact** when selecting and designing local energy systems
 - Energy saving
 - Reducing peak demand (esp. in winter)
 - Provide flexibility
- Create **the right (financial) incentives** for local businesscases and end users, that support the above criteria.
- Further develop local plans and provide clear choices to citizens and other stakeholders.

To be further developed



The challenge

- › 7.9 million existing homes with still 90% individual gas boilers
- 0.57 million non-residential buildings (production halls, offices etc.)
- End of national gas production in Groningen
- Climate targets & energy efficiency targets
- Circularity and biobased materials
- Many stakeholders, much work to be done

→ **Realisation**





Thank you for your attention