Netherlands Enterprise Agency

Roadmaps to decarbonized public buildings

The case of The Netherlands

CA-EED WG8.3 24 March 2021

Selina Roskam

Municipality of Deventer

Dutch approach of the climate

Polder

Developments on policy of buildings

› Timeline on non-residential buildings
  - Energy Agreement 2013
  - Climate Agreement 2019
  - Energy performance of buildings directive (EPBD)
  - Energy efficiency directive (EED)
  - Renewable energy directive (RED)
  - Policy on decarbonating houses and buildings (natural gas)
  - Policy on making heating and cooling more sustainable
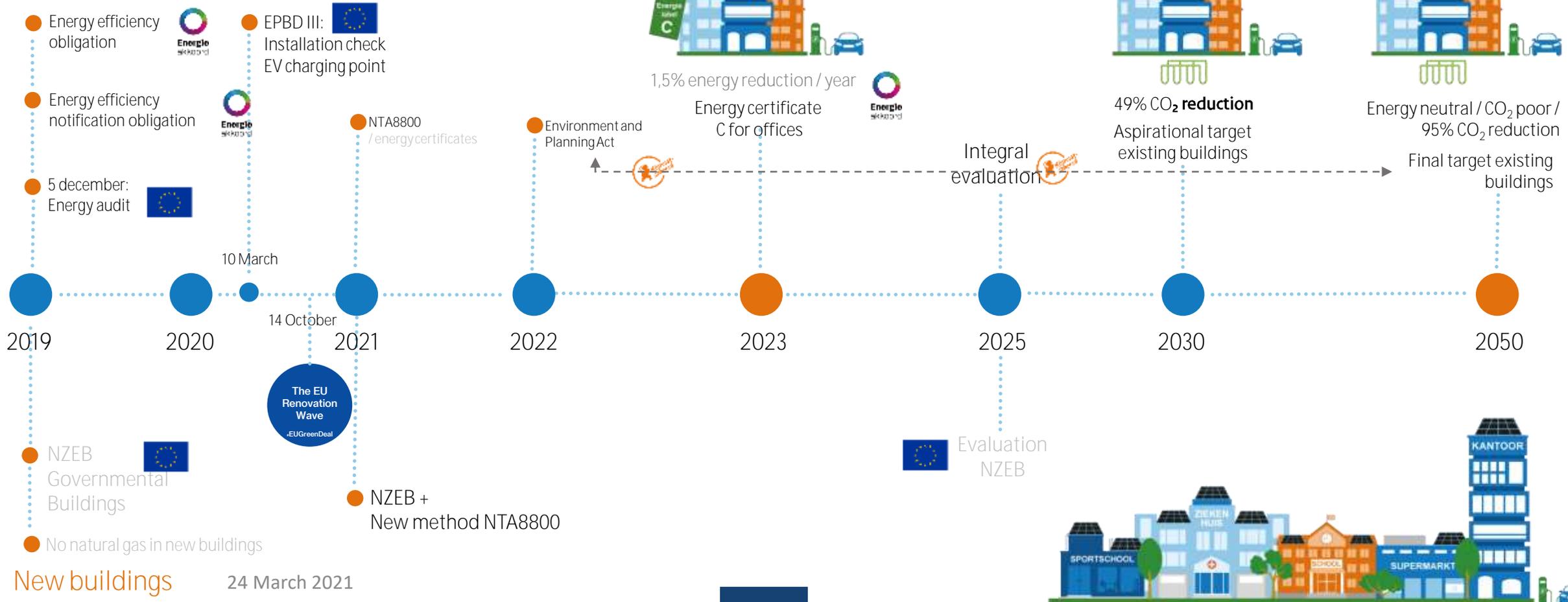 - Climate case

Dutch society loves natural gas for cooking and heating

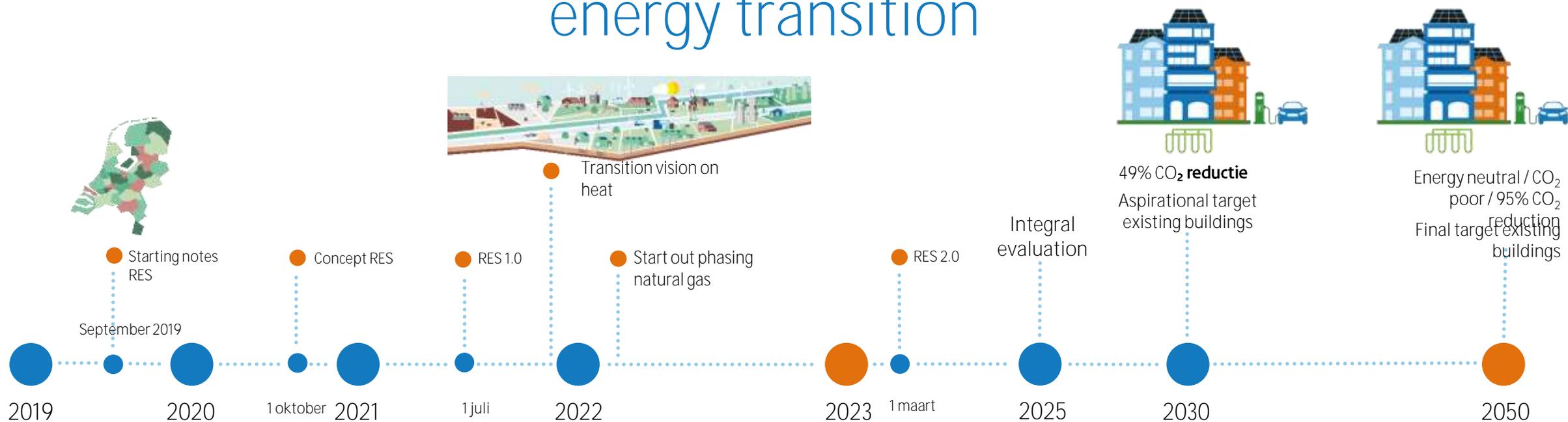# Timeline on policy of sustainable buildings

Existing buildings

- Energy efficiency obligation
- Energy efficiency notification obligation
- 5 december: Energy audit

- EPBD III: Installation check EV charging point

- NTA8800 / energy certificates

- Environment and Planning Act

1,5% energy reduction / year

Energy certificate C for offices

Integral evaluation

49% CO$_2$ **reduction**

Aspirational target existing buildings

Energy neutral / CO$_2$ poor / 95% CO$_2$ reduction

Final target existing buildings

10 March

14 October

The EU Renovation Wave

>EUGreenDeal

2019   2020   2021   2022   2023   2025   2030   2050

- NZEB Governmental Buildings

- NZEB + New method NTA8800

- No natural gas in new buildings

Evaluation NZEB

New buildings

Timeline for a regional and local area approach on energy transition

Transition vision on heat

49% CO_2 **reductie**
Aspirational target existing buildings

Energy neutral / CO_2 poor / 95% CO_2 reduction
Final target existing buildings

Starting notes RES

Concept RES

RES 1.0

Start out phasing natural gas

RES 2.0

Integral evaluation

September 2019

2019   2020   1 oktober 2021   1 juli 2022   2023   1 maart   2025   2030   2050

RES – regional energy strategy

Timeline on public buildings

- 12 Concept Sectoral Roadmaps for Public Buildings
- Definite sectoral Roadmaps
- Progress report on sectoral roadmaps
- Integral evaluation: 90% executed conform planning?

49% CO_2 **reduction**
Aspirational target existing buildings

Energy neutral / CO_2 poor / 95% CO_2 reduction
Final target existing buildings

2019 — 1 mei — 2020 — 2021 — 2022 — 2025 — 2030 — 2050

10 oktober

- Knowledge and innovation Platform on Sustainable Public Buildings

- Portfolio roadmaps

- Start Phase out Natural gas

Timeline on public buildings

12 Concept Sectoral Roadmaps for Public Buildings

Definite sectoral Roadmaps

Progress report on sectoral roadmaps

Integral evaluation: 90% executed conform planning?

49% CO_2 **reduction**
Aspirational target existing buildings

Energy neutral / CO_2 poor / 95% CO_2 reduction
Final target existing buildings

Urgenda Climate case

One stop shop Public Buildings

Ventilation program on school buildings

2019 1 mei 2020 2021 2022 2025 2030 2050

10 oktober

Portfolio roadmaps

Knowledge and innovation Platform on Sustainable Public Buildings

Start Phase out Natural gas

Organization of public buildings

Type of buildings	Responsible for housing
National governmental buildings ministries, prisons, law court, administration offices Police	National agency National police
Local governmental buildings	Local government is owner
Schools	Primary and secondary – local level between boards of schools and municipalities Higher education – boards of educational institutions
Care	Boards of care organizations
Cure	Boards of the hospitals
Sport	Municipalities and sport clubs
Cultural heritage	Mix of public and private owners

Branch organizations

› A lot

Content of Sectoral roadmaps

› **Current situation:**

– Energy use

– Target use in CO_2

– Floorspace in m^2

– Energy certificates

– Construction year

– etc

› **Vision** and **strategy** for cost effective transition to a CO_2 neutral portfolio in 2050

Sectoral roadmaps

CO_2 EMISSIONS AND FINANCE

› Scenarios to 30/50/80% reduction

› financial substantiation for the short and mid term

› planning for the transition, including milestones

PROCESS

› Preconditions and bottlenecks in financing, funding, legislation

› Proposal for monitoring

› Overview of organizations that have committed

What we see

› Creating added value to the society

› Interdisciplinary collaboration within the municipality and beyond

› From an approach per building to a portfolio approach

› Connecting with the regional (energy transition) approach

› Connecting with other (sustainability) challenges

12 sectoral roadmaps on public buildings

1. National governmental real estate
2. Municipal real estate
3. Provincial real estate
4. Police
5. Sports facilities
6. Primary and secondary education
7. Secondary vocational education
8. Higher professional education
9. Universities
10. Cure
11. Care
12. Monuments

Floorspace and numbers of public buildings

	Floor space (mln m²)	numbers	CO₂ emissions (kton)
National governmental real estate	12,3	5.000	552
Municipal real estate	27,2	36.175	874
Provincial real estate	0,4	149	16
Police	1,4	393	150
Sports facilities	5,7	10.200	1.372
Primary and secondary education	21,2	9.230	635
Secondary vocational education	3,2	62 institutions	
Higher professional education	2,4	220	80
Universities	4,4	14 institutions	175
Cure	8,7	254	1.000
Care	19,3	24.347	1.100
Monuments	34,5	120.000	

Some geography

Grootste partij

■ VVD ■ D66 ■ PVV ■ CDA ■ SGP ■ ChristenUnie

2017 2021

Approach of the Central Government Real Estate Agency

Sustainability pillars of Central Government Real Estate Agency

Pillar 1
Portfolio approach

Pillar 2
Local area approach

Pillar 3
Renewable energy on property and energy procurement

Pillar 4
Circular building economy

As much integration as possible
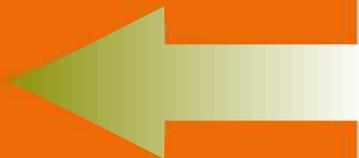
Mix of measures

Building approach
› Managing energy consumption through good energy management and the optimal setting of installations.
› Smart buildings
› Technical measures to save energy such as insulation and LED lighting.
› Generating energy on our buildings, including through solar panels.

Regional approach
› A regional / local oriented approach per building.
› Joining initiatives such as district heating based on the regional energy strategy.
› Optimize ATES

Procurement
› We purchase green energy, possibly generated on our own sites.

The national approach is also based on a sectoral approach

Offices

Defense buildings

Justice and Security
Prisons, Public
Prosecution, Council
for the Judiciary
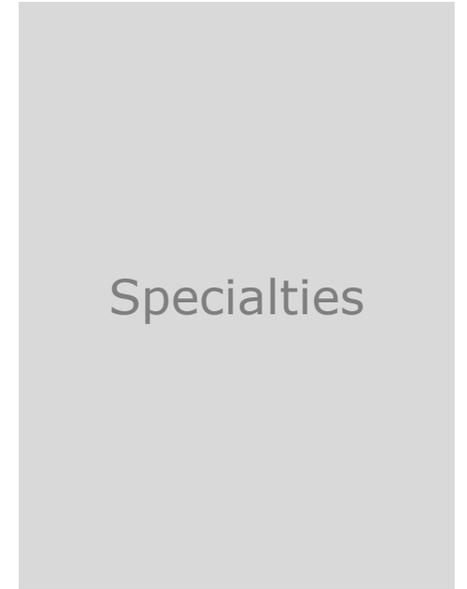
Specialties

Starting points

› Not a sustainability program but a **regular** real estate **process**

› Renovation and Conservation at **natural moments**

› Schedule measures with a focus on the final target in 2050 (developing).

› Take advantage of all sustainability opportunities, escalate in the event of conflict with other project goals.

› Payback time is not an issue when achieving objectives.

› Financing through increased (all-in) rent

Road to energy neutral real estate of local governments

energie@vng.nl

Opportunities and obstacles

- Lack of administrative urgency
- Financial position of municipalities is hindering the task
  - Possible consequences: selling of real estate, postponement of investments, closing some of public services
- Need for capacity and knowledge

- Retrieve collected accumulated knowledge of financing instruments

Roadmaps for CO_2 emission reduction in real estate of the healthcare sector
How can healthcare meet the Climate Agreement objectives?

Expertisecentrum Verduurzaming Zorg (EVZ)
www.dezorgduurzaam.nl

Sectoral roadmap cure and care

- Vision, strategy and planning for making the entire sector more sustainable
- View of current consumption and target consumption in CO2 in 2030 and 2050
- Overview m2 floorspace, years of construction and building functions of real estate total sector
- Calculates CO2 emission reduction and cost consequences of **4 target scenarios**
- Outlines cost-effective **measures at natural moments**
- Outlines preconditions and bottlenecks

Energiegebruik Langdurige zorg
WLZ (VV, GHZ en GGZ-B)

Legend:
- Totaal elektriciteitsgebruik processen
- Levering warmte
- Totaal elektriciteitsproductie WKK per jaar
- Totaal elektriciteitsgebruik installaties per jaar incl. WP
- Gasgebruik Totaal
- Opbrengst zon PV

24 March 2021
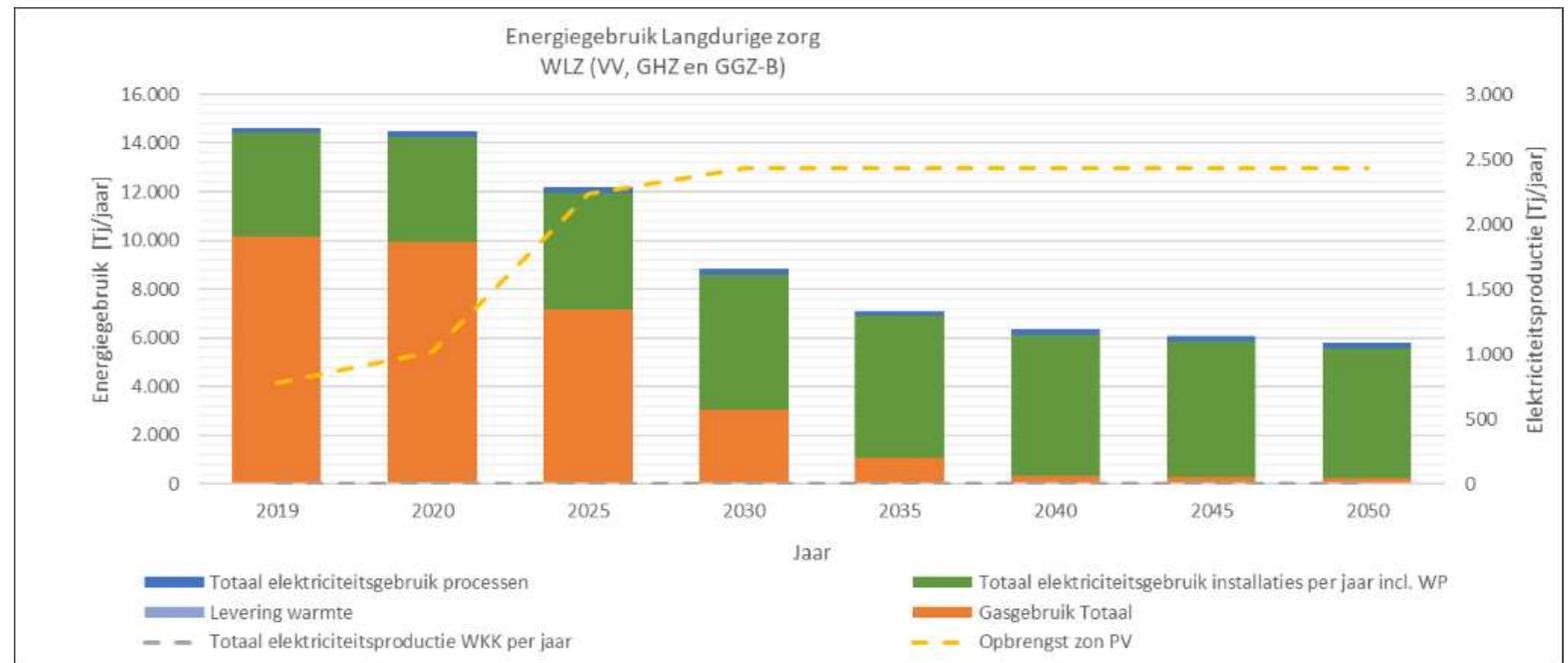
Portfolio roadmaps cure and care

- Assumptions:
  - **Multi-year** maintenance planning
  - Not a static document
  - Can be used for 4-year sector monitoring
  - Single capture multiple use:
    - EED reporting
    - Notification obligation

- Content:
  - Mission, ambition and objectives healthcare institution
  - Description and analysis of the real estate portfolio and energy consumption
  - Sustainability measures, planning and investments
  - Realized and future CO_2 emission reduction
  - Description and measures for business transportation (for EED audit)
  - Checklist for the List of specific approved measures (EML) in care sector

Rijksdienst voor het Cultureel Erfgoed
Ministerie van Onderwijs, Cultuur en Wetenschap

Roadmap for sustainable cultural heritage

duurzaamerfgoed.nl

duurzaam
erfgoed
routekaart

CA-EED | Public Buildings - the Netherlands
24 March 2021

Klimaattafel

Built environment

Monuments as well!

Klimaat-akkoord

Circular due to age and continued use

Use can be more energy efficient (CO_2 reduction)

With an eye for and preservation of cultural-historical values

Making monuments more sustainable requires tailor-made solutions

Monuments can be more sustainable and have to be more sustainable
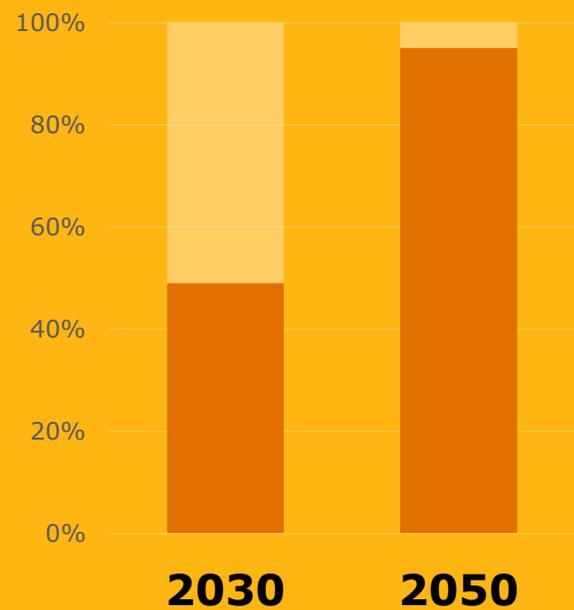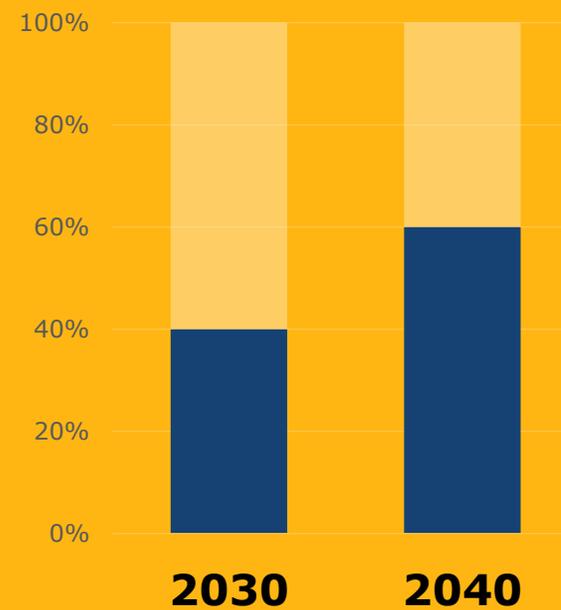
Portfolio roadmap

› Per institution or organization

– Board of school, health care institution, municipality etc

› Format

› Tools available

– Per sector

https://energieslag.rvo.nl/file/download/51193451/sjabloon-portefeuille-routekaart.pdf

Share the stories!

› https://www.rvo.nl/actueel/praktijkverhalen/wij-zijn-altijd-op-zoek-naar-verduurzamingskansen

› www.rvo.nl/maatschappelijk-vastgoed

Opportunities and challenges for public buildings

› Lack of administrative urgency

› Financial position of public sector

› Need for capacity and knowledge

› Monitoring

  – Energy performance of buildings

  – Energy use of buildings (CO_2 emissions)

?