HOGESCHOOL UTRECHT

WSBE Regional developments

The Netherlands

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- State of the Built Environment
- Policy
- Current Practice
- Best Practice: SBE16 Conference "Transition Zero"

State of the Built Environment The Netherlands

- Population:
 - 17 Million
 - 498/km2
- Climate:
 - Average temperature: ≈ 10 °C (50 °F)
 - HDD ≈ 3000
 - Global warming -> flooding
- Building industry
 - New built ≈ 55.000-70.000 per year
 - Renovated ≈ 100.000-150.000 per year
- Energy costs, (per kWh_e)
 - Electricity price ≈ 0,21 € (0,24 \$) per kWh_e 0,066 € (0,074 \$) per kWh_th (gas)
 - Energy bill ≈ 7% of average income

State of the Built Environment The Netherlands



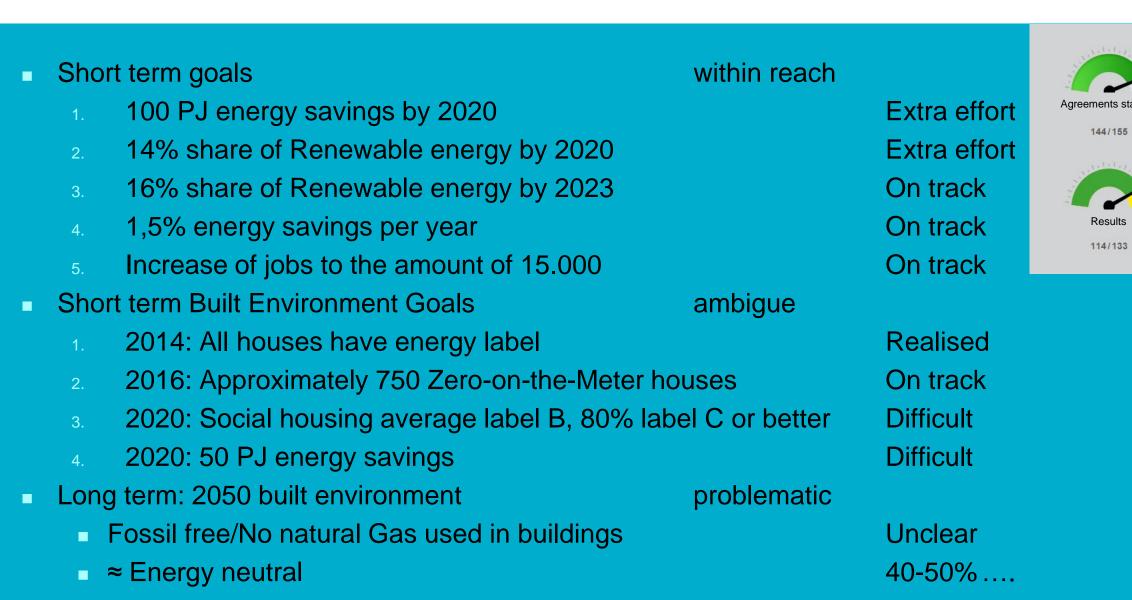
	From 1 (negative) to 5 (positive) 1 2 3 4 5		From 1 (negative) to 5 (positive) 1 2 3 4 5
The role of urban planning policies in supporting or constraining high levels of building performance	$\bigcirc \bigcirc \odot \odot \bigcirc \bigcirc$	Efficiency of management and op existing buildings	erations of
Extent to which requirements for sustainable building performance are included in building regulations / codes	$\bigcirc \bigcirc $	Achievement of nearly-zero opera and/or emissions in new buildings	
Progress in adapting existing and new buildings to risks related to climate change (wind, flooding, heat stress, etc.)	$\bigcirc \odot \bigcirc \bigcirc \bigcirc \bigcirc$	Reduction of energy demand in ap equipment	opliances and
Progress in reducing carbon content of fuels or electricity used for building operations	$\bigcirc \bigcirc $	Progress in educating and training (regulators, investors, designers, o	
Progress in reducing embodied energy and/or embodied emissions in construction	$\bigcirc \odot \bigcirc \bigcirc \bigcirc \bigcirc$		
Energy and emissions performance of the existing residential stock	$\bigcirc \bigcirc \odot \odot \bigcirc \bigcirc$		
Energy and emissions performance of the existing public and commercial stock	$\bigcirc \bigcirc \odot \odot \bigcirc \bigcirc$		

Policy: National Energy Agreement 2013



- Short term Overall Goals
 - 1. 100 PJ energy savings by 2020
 - 2. 14% share of Renewable energy by 2020
 - 3. 16% share of Renewable energy by 2023
 - 4. 1,5% energy savings per year
 - 5. Increase of jobs to the amount of 15.000
- Short term Built Environment Goals
 - 1. 2014: All houses have energy label
 - 2. 2016: At least 1000 Zero-on-the-Meter houses
 - 3. 2020: Social housing average label B, 80% label C or better
 - 4. Local authorities leading energy saving campaigns
- Long term: 2050 built environment:
 - Fossil free/No natural Gas used in buildings
 - ≈ Energy neutral

Current Practice



Best Practice: SBE16 Conference 'Transition Zero'

Topics

- Upscaling: from prototypes to mass-market
- Governance
- Small Urban Area
- Circular Processes

o Onstelten Ronald Rovers, Nadia Verdeven & Andy Wagenaar (ed

Common thread: Development of Zero-on-the-Meter houses

- New Built & Renovation
- Social housing and private home owners

http://hu-conferenties.nl/getmedia.php?Media=sbe16/sbe16.pdf&Online=true

Reframing energy & environment...

Woudn't it be nice?

- After a holiday week, your house
 - Is equiped with future-proof technology
 - Has a higher comfort level
 - Has an improved (exterior) appearance
 - Has an increased market value

All that, without increased (total) living expenses!







Best Practice: Smart Sustainable Renovation in 1 day





Payed for with the energy bill





Energy bill 175 € / month (196 \$/month)

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Investment potential 45.000 € (50.500 \$)

Best practice is ramping up..



- Ø—on-the-meter for new built houses > 10% in portfolio of large project developers
- ~ 1000 Ø—on-the-meter renovations have been carried out, 8000 are under contract, 14.000 are designated.











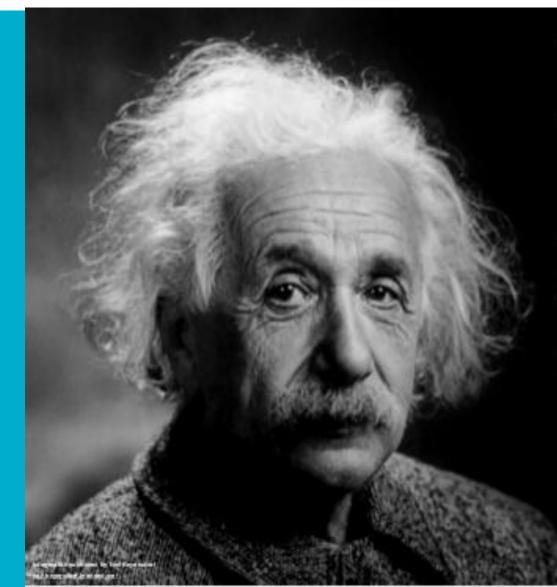






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Monitoring progress...



"In theory, theory and practice are the same. In practice, they are not."

Albert Einstein