AIDA

AFFIRMATIVE INTEGRATED ENERGY DESIGN ACTION

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Energy Economics Group

TU WIEN TECHNISCHE UNIVERSITÄT WIEN Vienna University of Technology

AIDA: nZEBs in municipal practice - Chances and Challenges

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www.eeg.tuwien.ac.at

www.facebook.com/aidaproject2012

nZEBs: Challenges for the decade

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"Energy performance of buildings"-directive

2010/31/EU

- **nZEB-standard** for public buildings by 2019
- By 2021 for ALL renovations and new buildings
- Independent, skilled workers
- „*achieving cost-optimal levels*…" 2010/31/EU, Art. 4.1

- Further Info on EPBD-implementation and support in policy making → www.entranze.eu

nZEBs: Challenges for the next decades

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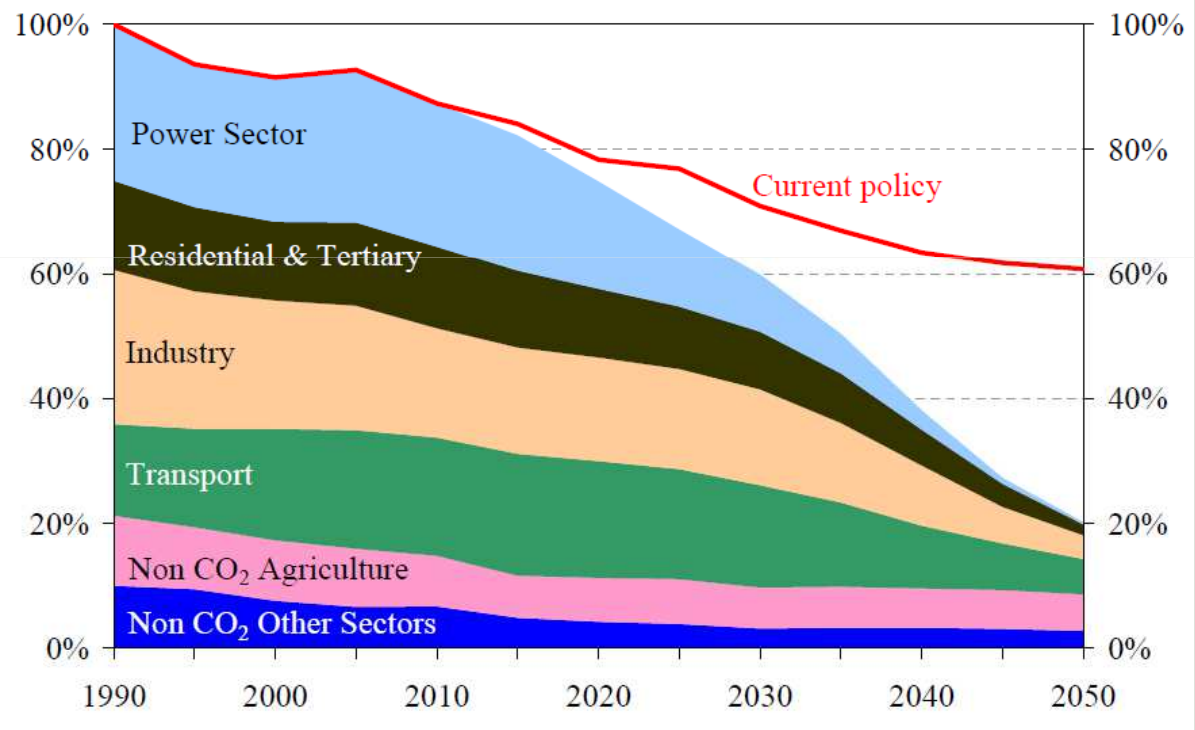
„GHG emission redction by 80 % to 95 % in the EU“



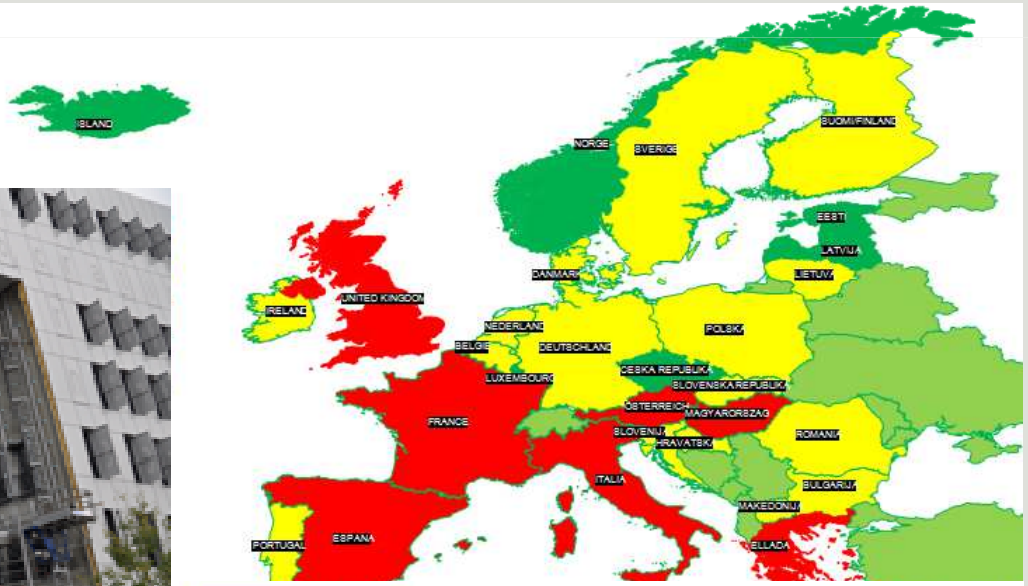
European target for CO_2-reduction according to the EU **Low-Carbon-Roadmap** 2050, COM(2011) 112

Optimal solution?

AIDA at a glance

Affirmative Integrated Energy Design Action

- ✓ AIDA aims to accelerate the market entry of nearly zero-energy buildings (nZEB)
- ✓ AIDA supports municipalities and building professionals in the EU
- ✓ AIDA is financed by the European Commission (IEE)
- ✓ AIDA in many countries!
- ✓ April 2012 – March 2015



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AIDA for YOU!

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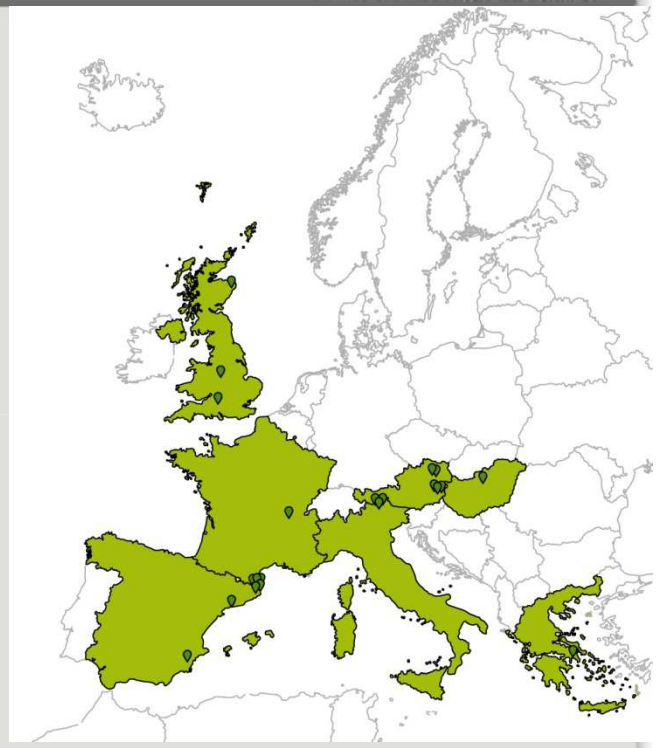
International study tours

- → Vienna
- → Lyon
- → Athens
- → Budapest
- → Barcelona… & many more!



nZEB in municipal practice

- → Best practice in new buildings & renovations
- → SEAP Assistance
- → Many reports available!

energycities

International network; contact: Peter Schilken/Enery Cities

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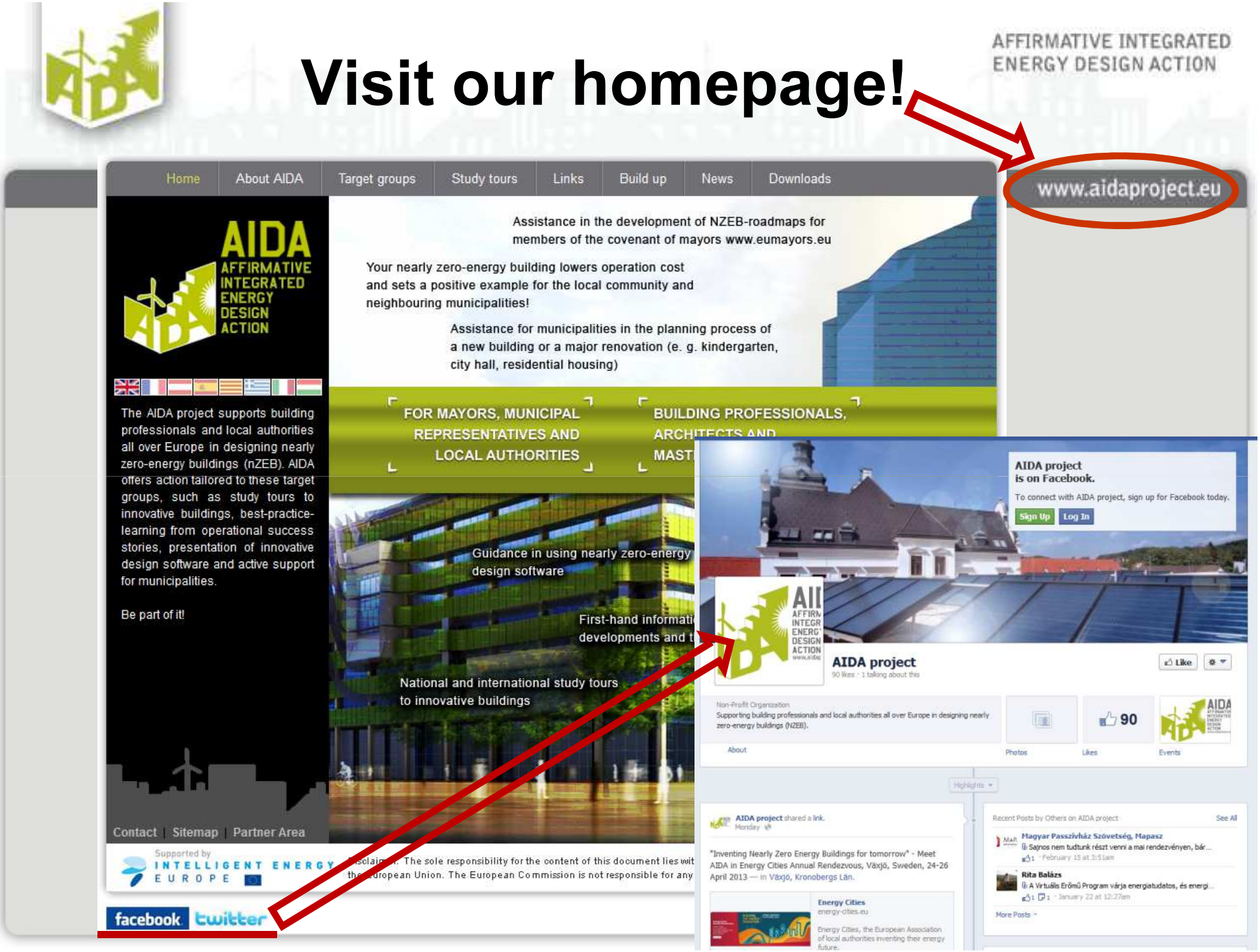
Visit our homepage!



SB13 Technical Tour

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AIDA Technical Tour 28 September 2013, 9:00 – 17:30

Multi-family house Kapfenberg

Multi-family house Zanklhof

Plus Energy Network Reininghaus - Smart City Graz

www.sb13.org/index.php/en/programme/excursions

nZEBs in municipal practice: Chances

1. The wide-spread use of nZEB technologies can be accelerated by creating local seeds as starting points for technology diffusion all over Europe.
2. As soon as you overcome the lack of technical knowledge, municipalities get more & more interested in nZEB and RES
3. Municipalities are proud to participate in (inter)national initiatives

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nZEBs in municipal practice: Challenges

1. nZEB requires a motivated town administration (mayor or high-level officials)
2. Financial crisis and / or missing funds – lack of money
3. nZEB standard usually not established in municipalities
4. No building projects within timeframe of your action
5. Building professionals and owners should work together → Integrated Energy Design Process beginning a the very first stage

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nZEBs in municipal practice: Example: Meran/Merano IT

Close cooperation with the municipality leading to nZEB-tender for a new elementary school (EE requirements & mandatory IED incl. RES):

- 40% of total primary energy from RES
- 60% of hot water supplied by RES
- Min. of 20W installed electric capacity per m^2 covered by RES (PV, Wind…)
- Max. 30kWh/m^2a heating demand
- Max. 20kg/m^2a CO_2-emissions

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Vocational school

(school, office, workshop, dorm & canteen) nZEB in Amstetten, Austria

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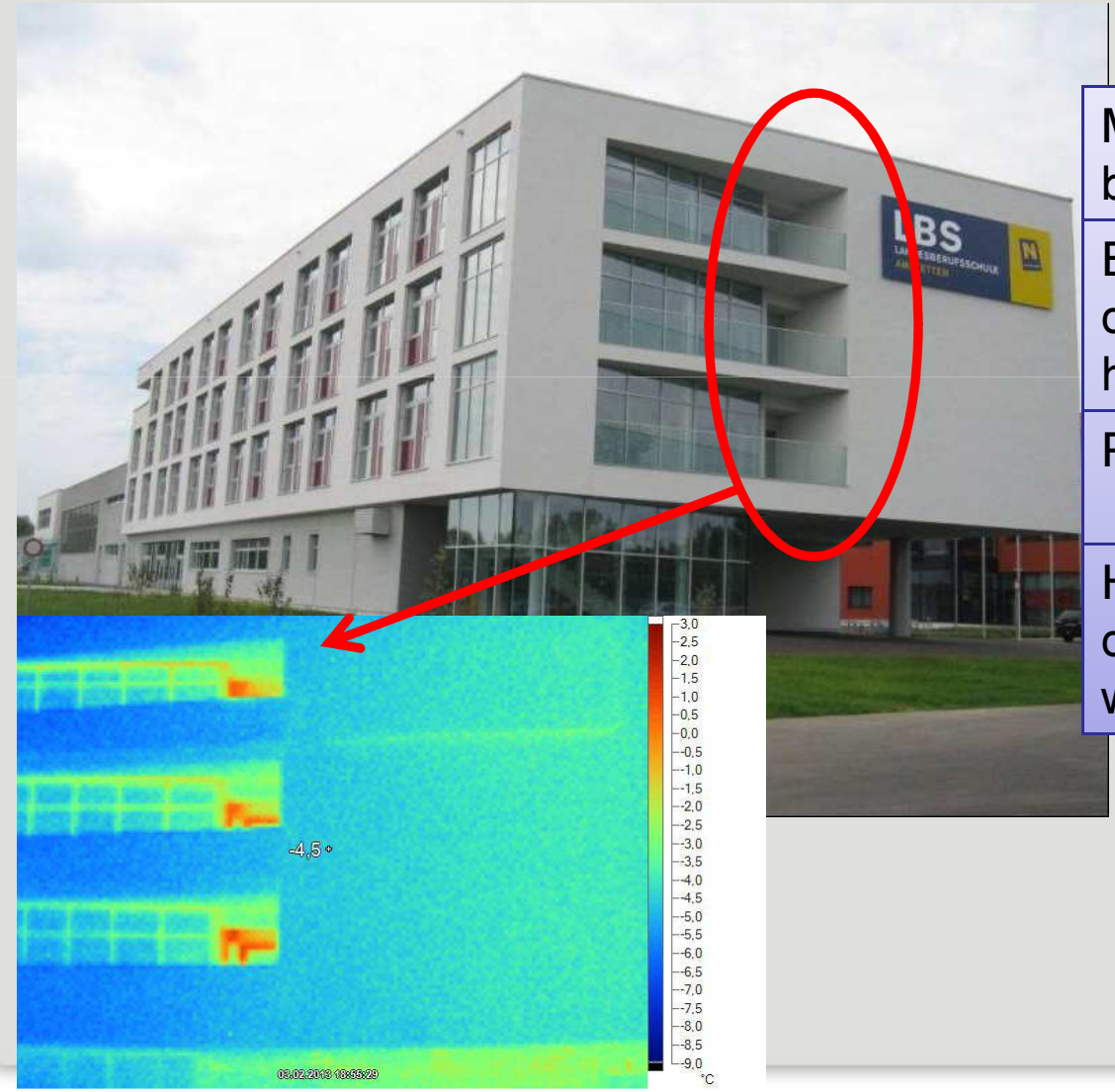

Multifunctional building	
Energy demand for heating	20 kWh/m²a
PV-system	5 kw_p tracking system
Heating and domestic hot water system	Biomass district heating system

Lessons Learnt (1)

- Decarbonisation in the building sector can be achieved „easily“ and should therefore be realised.
- Inertance of the building sector → measures should be taken right now and show high effectiveness
- Policy measures for minimum standards & national implementation of EPBD (31/2010/EU)

Lessons Learnt (2)

- Combined heat & power (CHP) district heating systems in urban areas (high heat density)
- Many interlinkages between energy efficiency, heat- and electricity sector and energy storage; role model Denmark
- High potential for solar- and ambient heat in nZEBs due to low flow temperature
- PV becomes more and more attractive

Lessons Learnt (3)

- Do not create competition among energy efficiency and renewable energy sources, instead push an optimal use of synergies!
- The requirements of a sustainable energy supply are enormous; all available options are needed!
- It‘s a long way but be positive…

Yes we can!

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- Technische Universität Wien, Energy Economics Group, AT
- AEE - Institute for Sustainable Technologies, AT
- CIMNE BEEGROUP, Building Energy and Environment, ES
- Centre for Renewable Energy Sources and Saving, EL
- EURAC research Institute for Renewable Energy, IT
- Geonardo Environmental Technologies Ltd., HU
- HESPUL - énergies renouvelables & efficacité énergétique, FR
- IREC - Catalonia Institute for Energy Research, ES
- Greenspace Live Ltd., UK
- Energy Cities, FR

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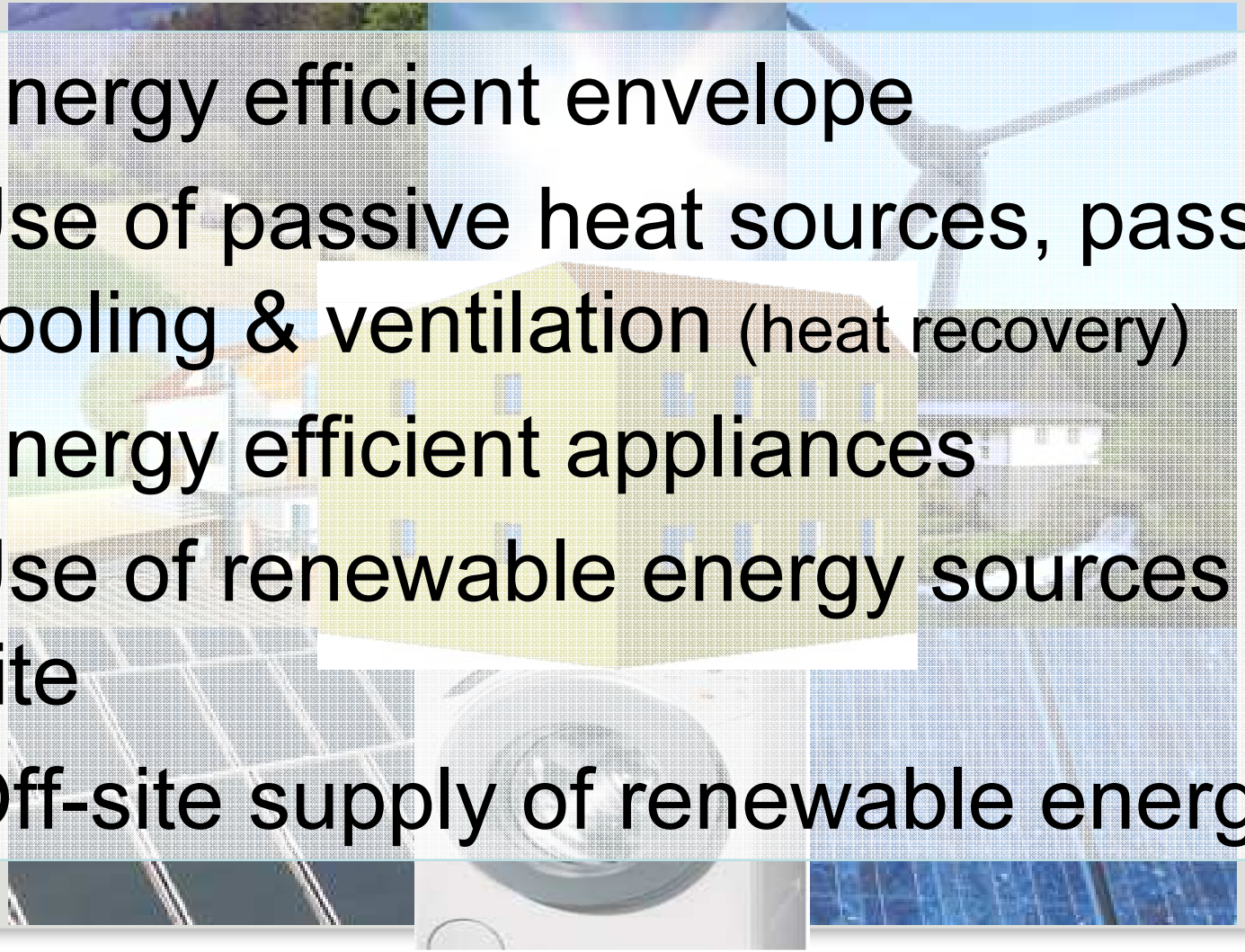
Technical scheme for nearly zero-energy buildings



1. Energy efficient envelope
2. Use of passive heat sources, passive cooling & ventilation (heat recovery)
3. Energy efficient appliances
4. Use of renewable energy sources on-site
5. Off-site supply of renewable energy

Surrounding conditions for nZEBs

- Policy framework
- Detailed analysis of the building site
- **Cost optimality (?)** (i. a. product's life-span, interest rate)
- **Training and education** of building professionals
- **User behaviour is essential!**