Energy challenges and solutions in CEE

[Diagram with various energy-related elements and statistics]

Solutions are in our hands

[Additional elements and statistics related to energy efficiency and sustainability]
Energy challenges and solutions in CEE

EU energy facts

World energy facts

World vs. EU energy trends

Solutions are in our hands

Arguments for absolute resource use reduction

Rural response - RES energy and climate package

Thank you for your attention
Energy challenges and solutions in CEE

Veronika Kiss, CEEweb for Biodiversity

*How can energy savings deliver economic as well as social benefit?*
Contents of this presentation

- Why CEEweb?
- Energy facts (Global, EU, CEE)
- Policy responses
- Need and solutions for absolute energy use reduction
Why CEEweb for Biodiversity?

- Network in CEE
- Resource use: the biggest driver behind biodiversity loss
- We advocate for absolute energy use reduction considering social justice
World energy facts

**Final energy consumption 2012**

- World includes international aviation and international marine bunkers.
- **In these graphs, peat and oil shale are aggregated with coal.**
- ***Includes geothermal, solar, wind, heat.*

Source: IEA - Key World Energy Statistics, 2014

**Energy scenarios**

- New Policies Scenario
- 450 Scenario

Based on policies under consideration

Based on policies needed to limit global average temperature increase to 2°C.

Source: IEA - Key World Energy Statistics, 2014
Final energy consumption

1973
- Electricity 9.4%
- Biofuels and waste 13.1%
- Natural gas 14.0%
- Oil 48.2%
- Coal 13.7%
- Other 1.6%

4672 Mtoe

2012
- Electricity 18.1%
- Biofuels and waste 12.4%
- Coal 10.1%
- Natural gas 15.2%
- Other 3.5%
- Oil 40.7%

8979 Mtoe

*World includes international aviation and international marine bunkers.
**In these graphs, peat and oil shale are aggregated with coal.
***Includes geothermal, solar, wind, heat.

Source: IEA - Key World Energy Statistics, 2014
Energy scenarios

New Policies Scenario

- Non-energy use: 10.1%
- Industry: 29.4%
- Buildings and agriculture: 32.8%
- Transport: 27.7%

12,001 Mtoe

450 Scenario

- Non-energy use: 11.3%
- Industry: 29.8%
- Buildings and agriculture: 33.4%
- Transport: 25.5%

10,442 Mtoe

Based on policies under consideration based on policies needed to limit global average temperature increase to 2 °C

Source: IEA - Key World Energy Statistics, 2014
EU energy facts

EU gross inland energy consumption

1996 - 1671 Mtoe
2012 - 1683 Mtoe
Source: EU energy in figures, 2014

Energy Efficiency

Overall assessments of national plans to achieve 20% energy savings by 2020
Source: Coalitions for Energy Savings

Energy Dependency

Source: EU energy in figures, 2014
EU gross inland energy consumption

1996 - 1671 Mtoe
2012 - 1683 Mtoe
Source: EU energy in figures, 2014
### CEE final energy consumption

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Source: EU energy in figures, 2014
Energy Efficiency

Overall assessments of national plans to achieve 20% energy savings by 2020

Source: EU energy in figures, 2014

Source: Coalitions for Energy Savings
Energy Dependency

EU-28 – Imports from Extra-EU – 1990-2012 (%)
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World vs. EU energy trends

- lack of absolute energy use reduction: rebound effect
- relative and not absolute decoupling
- economic downturn
- increased energy import, transferred manufacturing

Global trade

Source: UNDER PRESSURE
How our material consumption threatens the planet’s water resources
Global trade

Source: UNDER PRESSURE
How our material consumption threatens the planet’s water resources
The case of China

Source: The Global Resource Footprint of Nations
Policy response: 2030 energy and climate package

- Proposes a 30% energy savings target
- Leaves the question of whether the target should be binding open

- EU leader will decide in October on
  - 30% or 40%
  - binding or non-binding

Benefits of energy saving

- European Commission impact assessment: the 40% target would
  - reduce gas imports by some 40% and save the EU €552bn on energy import by 2030
Benefits of energy saving

- European Commission impact assessment: the 40% target would
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  - increase economic growth
  - create jobs
- New Stern report:
  - high-potential solution for climate change
  - large untapped efficiency opportunities
  - highly cost-effective
- New IEA report
  - €1 million invested -> growth ranging from 0.25% to 1.1% / year
Arguments for absolute resource use reduction

Scientific argument

Policy argument

Tough contraction and convergence
- By 2050 global consumption maintained on the level of 2000 and the same in every country
- Industrialized countries reduce by a factor of 3 to 5 (16 to 5-3 t/capita/year)
- Developing states achieve 10-20% reduction in their metabolic rates

Source: Rockstorm, 2009
Scientific argument

Planetary boundaries

Source: Rockstrom, 2009
Doughnut and the *Brundtland* definition of SD

Environmental space sets the “ceiling,” - *idea of limitation*
Social protection defines the "floor" - *concept of needs*

Source: Joachim Spangenberg
Policy argument

Tough contraction and convergence

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Relative decoupling

Source: IRP, Decoupling report, 2011
Solutions are in our hands

Non-renewable energy quota (HU) and TEQs (UK)
- Aim to set a cap on non-renewable energy use based on present use rates. The cap would be lowered progressively year by year.

Social and environmental benefits
- Guarantees that a nation meets its emissions reduction targets,
- Caps the fuel and electricity consumption of the national economy,
- Optimizes the energy use available under the cap
- Ensures fair access to energy for all,
- Support the active participation and cooperation of citizens and all other energy users in rapidly reducing reliance on fossil fuels

Corporate example
The world's largest manufacturer of pumps and pump systems
- decreases energy use and never to emit more CO2 on group level than in 2008, despite the growth of the company
- reduces the used oil emulsion by 30%

Energy use entitlement
- Allocated among individual consumers (on an equal per capita basis), and sectors
- Unused entitlement sold for interest-free “entitlement money” spent in an environmentally and socially certified market.

Revolving Fund
- Finances investments in energy efficiency and renewables
- Interest-free loans in entitlement money with a payback period adjusted to the energy savings in income generation realized through the investments
- Accessible to everybody, including the poor.
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Advisory services

- Helps all stakeholders to change their behavior and adapt to the new scheme
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GMH CO$_2$ emissions (t)

- 2008: 10,000 t
- 2011: 10,000 t
- 2012: 10,000 t
- 2013: 10,000 t
Thank you for your attention

www.ceeweb.org/rcc