

Financing small-scale Energy Efficiency and Renewable Energy Projects

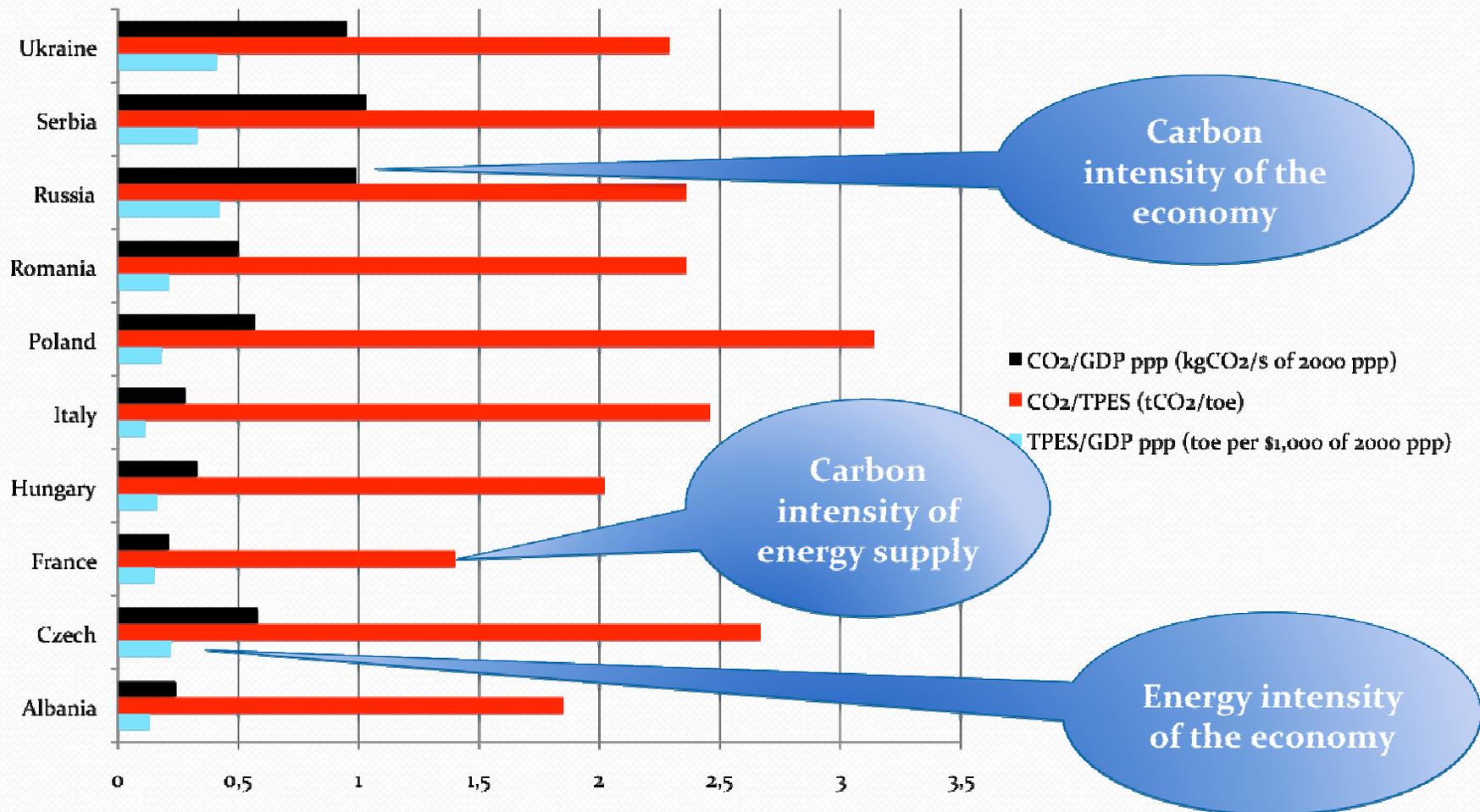
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The question

- CO₂ emissions must be halved (at least) to cap CO₂ concentrations at 450 ppm, this means dividing BAU CO₂ emissions (from energy use) by 4 [IEA-ETP 2008]
- This will require \$trillions in investments
- EE and RE are preferred options (44% and 21% resp.)
 - Known technologies
 - Low unpleasant collateral effects
 - Least-cost
- Spotlight is on “*how much*” and “*who pays*”? ***not on how best deliver funds to actual projects*** – no clear and agreed best practice on EERE financing schemes
- UNECE report “Financing global climate change mitigation” released in 2010

High mitigation potential in the region

(source: IEA 2007)



But EERE investment is way below where it should be; why?

- High cost
 - Subsidised fossil energy production and use
 - No pricing of the carbon externality (tax or trading)
- Funding gaps
 - Rare, but *equity* scarce in many countries
- Deficient information
 - Low prioritisation of EE by managers
- Lack of capacity
 - Project preparation
 - Project appraisal
- Perceived risks



A lot of these issues point to market failures

22 EERE financing schemes reviewed

Issue / barrier	Name of mechanism	Geography
❖ Closing the equity gap: Dedicated private equity funds (3 schemes)	<ul style="list-style-type: none"> ❖ European RE Fund LP (Platina Partners) ❖ EnerCap Power Fund LP ❖ GEEREF 	<ul style="list-style-type: none"> ❖ <u>EU</u> * ❖ CEE * ❖ Developing countries *
❖ Closing the debt-equity gap: Dedicated subordinated debt facilities (2)	<ul style="list-style-type: none"> ❖ FIDEME ❖ CAREC 	<ul style="list-style-type: none"> ❖ <u>France</u> ❖ Central America *
❖ Supporting a nascent ESCO industry (3)	<ul style="list-style-type: none"> ❖ 1st Energy Conservation Programme ❖ UkrEsco ❖ Bulgarian ESCO Fund 	<ul style="list-style-type: none"> ❖ China ❖ Ukraine ❖ Bulgaria
❖ Using utilities or municipalities as relays in the financial intermediation chain (5)	<ul style="list-style-type: none"> ❖ EmPower New York ❖ PROSOL ❖ TPPPA for Solar PV ❖ CHUEE ❖ Berkeley FIRST 	<ul style="list-style-type: none"> ❖ <u>USA</u> ❖ Tunisia ❖ <u>USA</u> ❖ China ❖ <u>USA</u>
❖ Financing energy access (off-grid communities in rural areas) with micro-finance (1)	<ul style="list-style-type: none"> ❖ Grameen Shakti 	<ul style="list-style-type: none"> ❖ Bangladesh
❖ Mitigating risks of local lenders: Partial (Risk or Credit) Guarantees (2)	<ul style="list-style-type: none"> ❖ USAID Development Credit Authority ❖ 2nd Energy Conservation Programme 	<ul style="list-style-type: none"> ❖ Developing countries * ❖ China
❖ Remedying the inability or unwillingness of CFIs to finance EERE projects: Special Purpose Financing Vehicles (3)	<ul style="list-style-type: none"> ❖ BEEF ❖ IREDA ❖ Carbon Trust 	<ul style="list-style-type: none"> ❖ Bulgaria ❖ India ❖ <u>UK</u>
❖ Dedicated DFI EE/RE credit lines to local CFIs (3)	<ul style="list-style-type: none"> ❖ EE Revolving Fund ❖ SEFF ❖ AFD 	<ul style="list-style-type: none"> ❖ Thailand ❖ Countries in transition ❖ China

Lessons (1)

- *Very hard to assess (and rank) objectively EERE financing mechanisms given the lack of evaluation in the public domain*
- *Need for thorough initial diagnosis of country context*
- *Deal flow origination and preparation matters as much as provision of finance*
- *For equity or quasi-equity: public “patient capital” can be a much needed catalyst for private capital*
- *For debt:*
 - *create a dedicated financing vehicle only if local banks are not suitable for the job*
 - *provide funding if liquidity is insufficient and/or funding terms (tenors, rates, margins, etc) inadequate*



Lessons (2)

- otherwise *credit enhancement* may be enough in the form of partial (risk or credit) guarantees, or integrating loan payments within utility bills or municipal taxes
 - Example: BerkeleyFirst (Cal., USA)
- *ESCOs* are a worthy but complex instrument
 - Few examples of success stories, e.g. China 1st Energy Conservation Programme (WB/GEF) thanks to a drastic simplification of the ESCO model
- *Demand Side Management (DSM)* still holds potential if conflicts of interest can be resolved
 - Utilities torn between selling and saving energy
 - Can be resolved through use of “white certificates”

Lessons (3)

- *Support of governments* is key, to:
 1. Set policies and targets for EERE, e.g. energy pricing policies, feed-in tariffs, standards, etc.
 2. Influence market players
 3. Streamline public procurement procedures for ESCOs (e.g. FEMP in the USA)
 4. If necessary create a dedicated financing vehicle or window
 5. Provide financial incentives

Lessons (4)

- *Subsidies are legitimate to tackle genuine market barriers*
 - But low energy prices (below LRMC) are a *self-inflicted* barrier – bad subsidies are an obstacle to EERE uptake in many countries, >\$250bn p.a. G20 Pittsburg summit has pledged to phase them out!
 - Aim for highest possible leverage of public funds
 - Sustainability requires phasing out at some point
 - 6 main types of subsidies support EERE financing:
 1. Investment grant: e.g EBRD's BEERECL
 2. Concessional loans (below market interest rates): e.g Carbon Trust
 3. Guarantees: e.g IFC
 4. Patient equity: e.g GEEREF
 5. Feed-in tariffs (a cross-subsidy among electricity users)
 6. Technical Assistance



Lessons (5)

- *Technical Assistance is critical* for (at least):
 - Initial diagnosis
 - Awareness raising of target beneficiaries
 - Project preparation support
 - Capacity building (of banks, government, etc.)
 - Interim or ex-post evaluation
- Maximise *local* content of TA for sustainability
- *Sources* of TA funding are multiple but coordination of programmes is sub-optimal, and overlap frequent