



UNECE Regional GTF Report: Beneath the SE4ALL GTF Headline Indicators

GTF Regional Reports and RISE Panel Discussion

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UNECE Region

North America, Europe and Central Asia

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Energy Services

Beyond Physical Access

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SE4ALL Indicators:

100% Access to electricity,
98% Access to clean cooking fuels

Access Realities

- Some countries face limited power supply, outages, etc: despite 100% access
- Human comfort and safety depends on substantial heat services in most ECE countries
- Significant challenge to upgrade, renew older un-insulated housing stock, with locked-in fossil fuel dependence

Energy Poverty

- In all countries, low-income households make tradeoffs between heat, food, or other needs
- Measurable proportion of households spend more than 10% of income on energy
- Addressing GHG emissions without energy efficiency could worsen energy poverty

'Efficiency first' offers a least cost approach to improving service and access.

Energy Efficiency

Demand and Supply Side Perspectives

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**SE4ALL Indicators: 8MJ/USD in 1990 to 5.1MJ/USD in 2014 (2011ppp)
3.9EJ avoided TFEC between 2012 -2014**

Demand Side Energy Efficiency

- All countries have National Energy Efficiency Action Plans, but limited progress and compliance tracking
- Building energy efficiency slow
- Solid appliance efficiency progress in North America, EU
- Largely untapped industry energy management productivity potential
- Poor vehicle fuel economy progress outside EU

Further value in studying energy efficiency progress, potentials and prospects.

Supply Side Energy Efficiency

- Fossil fuel (coal, gas and oil) power plant efficiency grew from 36% in 1990 to 41% in 2014
- Gas fired generators improved from 37% in 1990 to 49% in 2014, the highest amongst regions
- Electricity T&D losses declined from 8.2% in 1990 to 7.2% in 2014, the lowest amongst the regions
- Natural gas T&D fell from 1.2% to 0.6%

Significant scope to replace coal with gas and renewable energy power options⁴

Renewable Energy

Integration Challenges

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SE4ALL Indicators: Share RE in TFEC: 5.9% (1990) to 11.5% (2014)

Overall, significant fossil fuels lock-in, but

- Large potential for variable and baseload RE
- Opportunities for decentralized RE
- Traditional wood stoves offer efficient low-cost RE
- Scope for utility policies to advance beyond naive FITs / quota's to enable more RE in an economic way
- Experience and lessons learnt from countries with significant RE upscaling within the region

With 100% access, the role of utilities is critical

- Market design is key to managing variability,
- Capacity pricing motivates renewable energy that complements system load dynamics,
- Need to enabling economic demand and supply side choices.
- Clear accountabilities for back up.

There is scope for study of effective RE integration policies

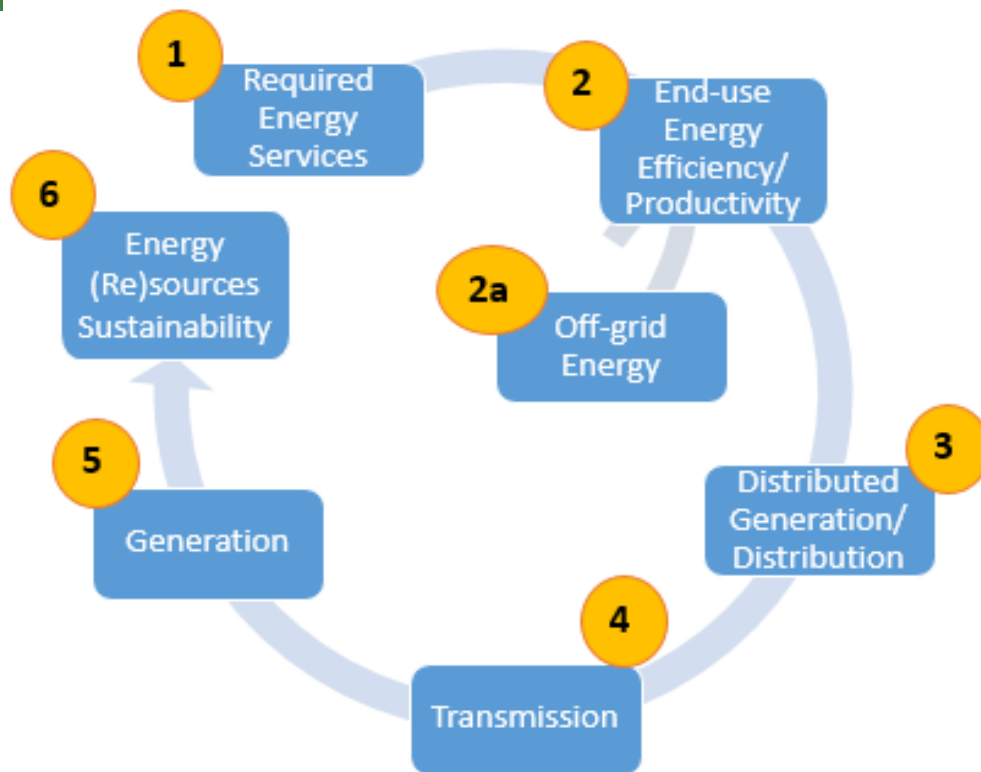
Tracking Energy for Sustainable Development

Indicators across the Sustainable Energy System

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A System Perspective on Energy for Sustainable Development



Broader set of indicators required

- Fossil fuels related aspects (share of FF in TPES, generation efficiency, etc.)
- Climate aspects such as climate intensity of the energy sector
- Nexus considerations such as for the energy-water-food nexus
- Quality of life

Review of existing indicators

- Renewable Energy: Share of RE in TFEC versus Share of RE in TPES, Investments into RE
- Move beyond physical access to quality of access, including affordability