



## The Global Energy Assessment Towards a More Sustainable Future

**IIASA**

International Institute for Applied Systems Analysis  
and its international partners present the

**[www.GlobalEnergyAssessment.org](http://www.GlobalEnergyAssessment.org)**



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## Towards a more Sustainable Future

- Energy is a crucial development goal for responding to challenges in the 21st century
- Universal access is a pre-condition for overcoming poverty and feasible if all stakeholders work together.
- Energy transformation will bring multiple co-benefits for health, security, climate change
- Financing requirements are huge but achievable with right and sustained policies

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## Sponsoring Organizations



### **International Organizations**

GEF  
IIASA  
UNDESA  
UNDP  
UNEP  
UNIDO  
ESMAP (World Bank)

### **Governments/Agencies**

Austria - multi-year  
European Union  
Germany  
Italy  
Norway  
Sweden - multi-year  
USA (EPA, DoE)

### **Industry groups**

First Solar  
Petrobras  
WBCSD  
WEC

### **Foundations**

UN Foundation  
Climate Works Foundation  
Global Environment & Technology  
Foundation

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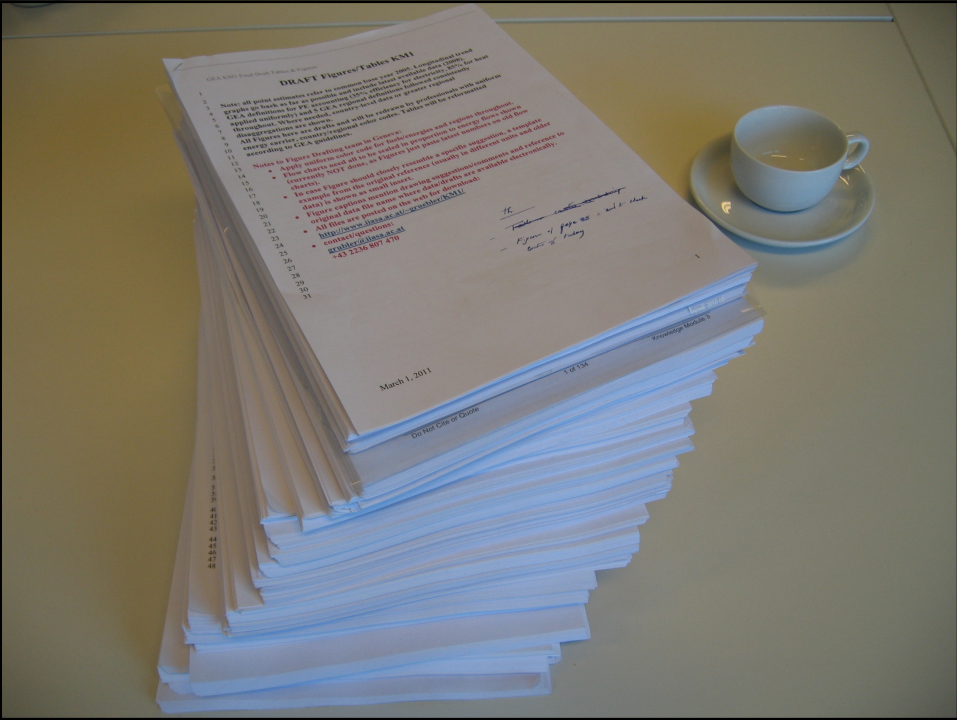
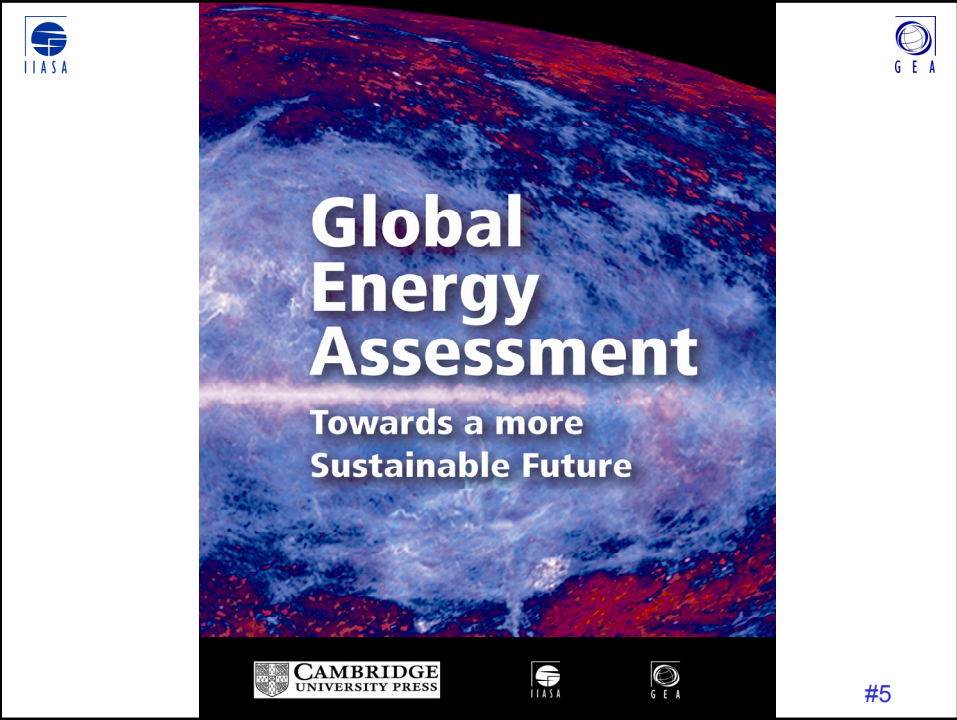


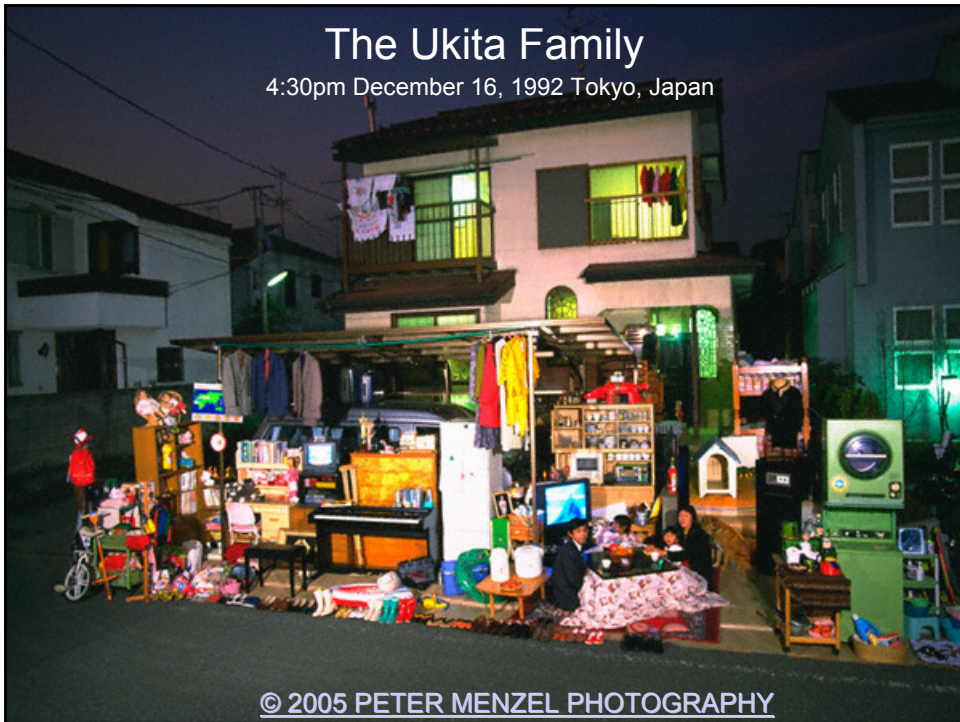
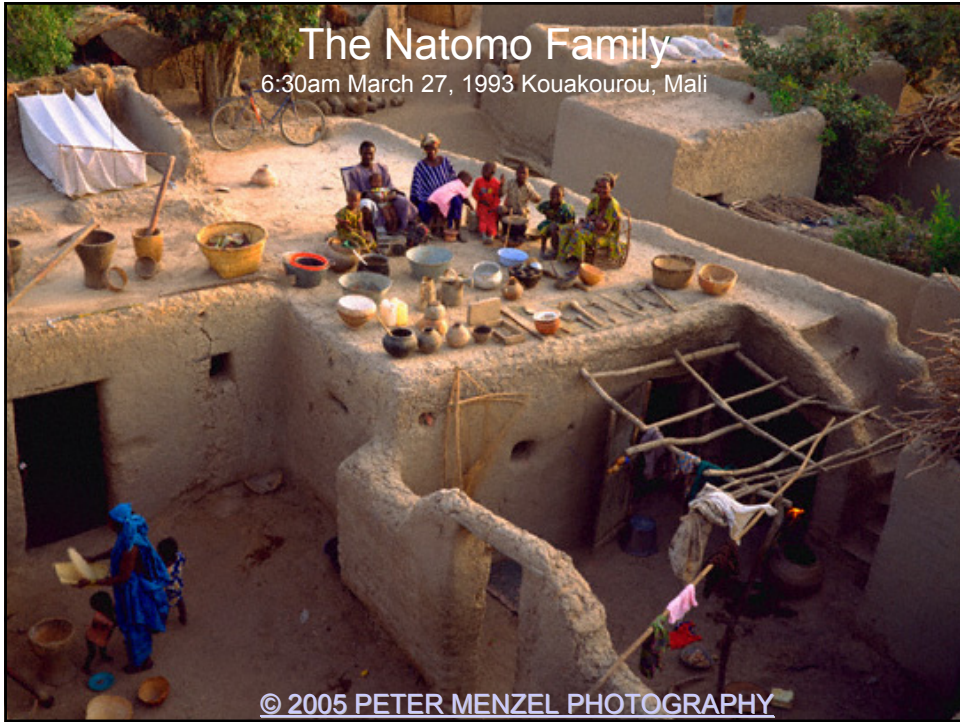
## Towards a more Sustainable Future

- Initiated in 2006 and involves >300 CLAs, LAs and ERs and >200 Anonymous Reviewers
- Peer-review coordinated by Review Editors is complete - ongoing responses and revisions.
- Final report (Cambridge Univ. Press) with launch on 21-23 June 2011 at Vienna Energy Forum followed by vigorous dissemination

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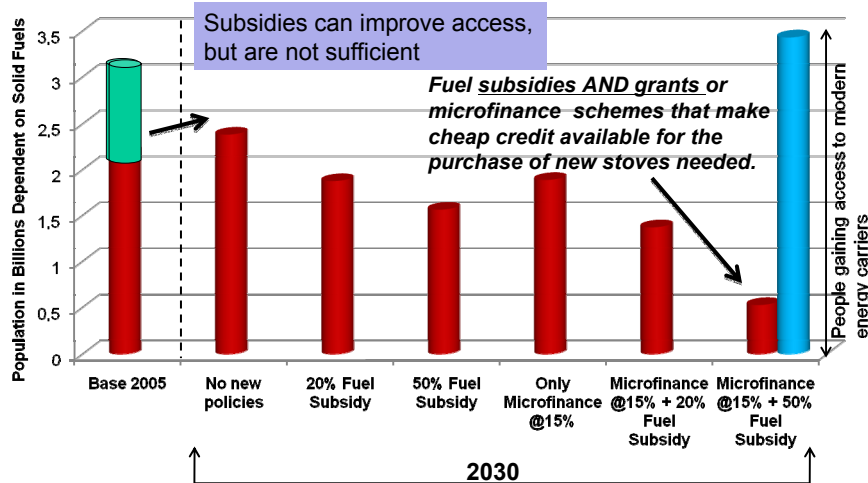




- Access to energy and ecosystem services (a prerequisite for MDGs & wellbeing)
- Resources and potentials not a constraint; but transformation and decarbonization
- Energy transformations require R&D and rapid technology diffusion & deployment
- Sustained energy investments are needed and would result in multiple co-benefits

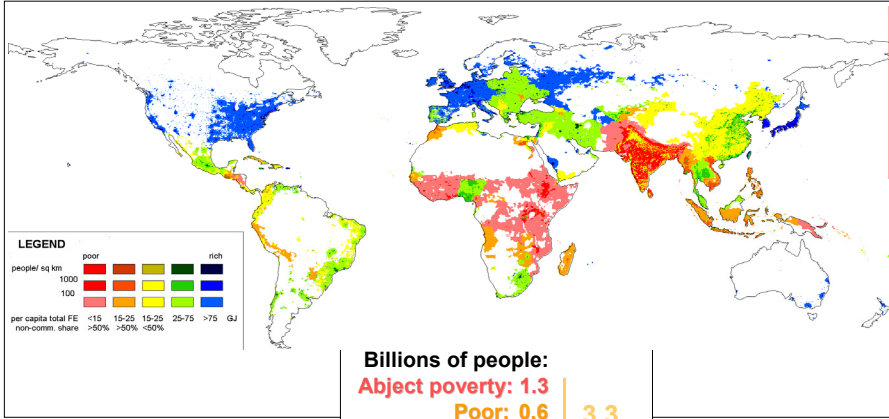
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200 mill additional people without access in absence of policies by 2030



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Final energy access (non-commercial share) in relation to population density

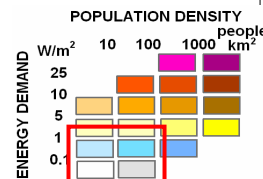


Source: Gruebler et al, 2009

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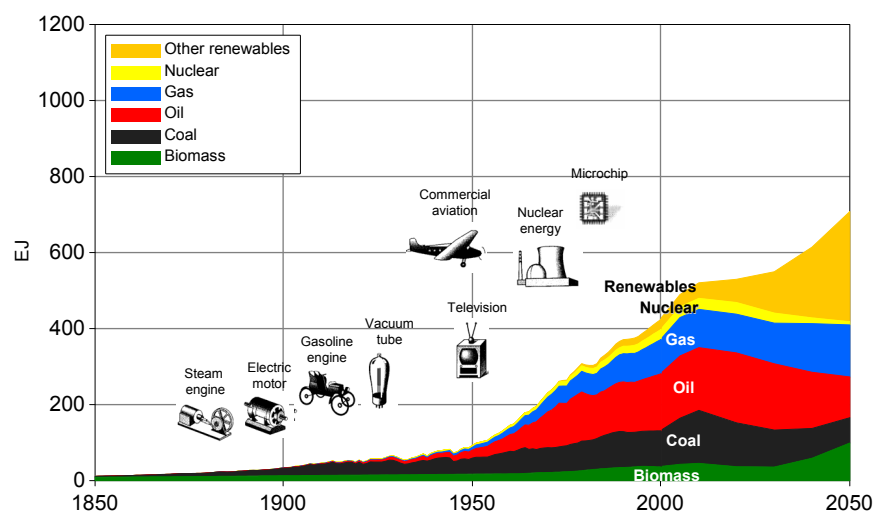
WEU: 21% of demand below renewable density threshold

EEU: 34% of demand below renewable density threshold



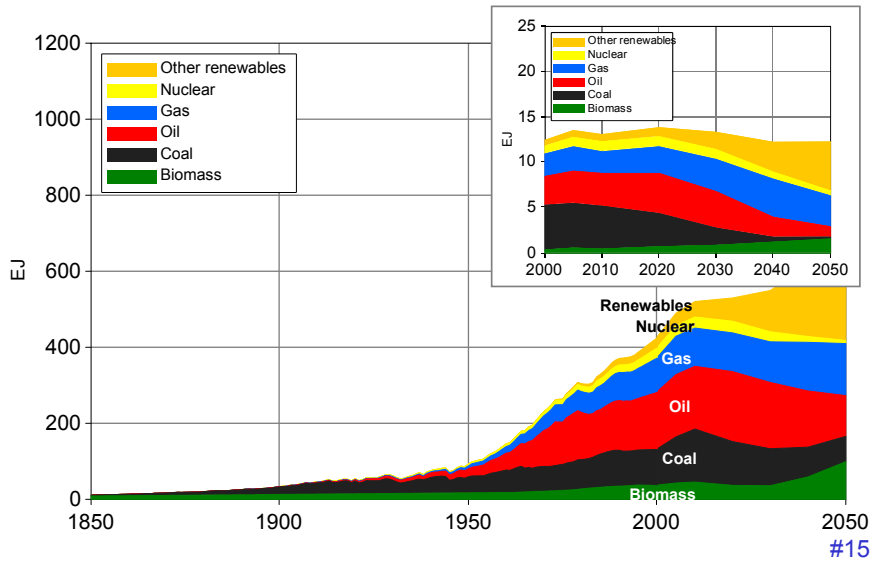
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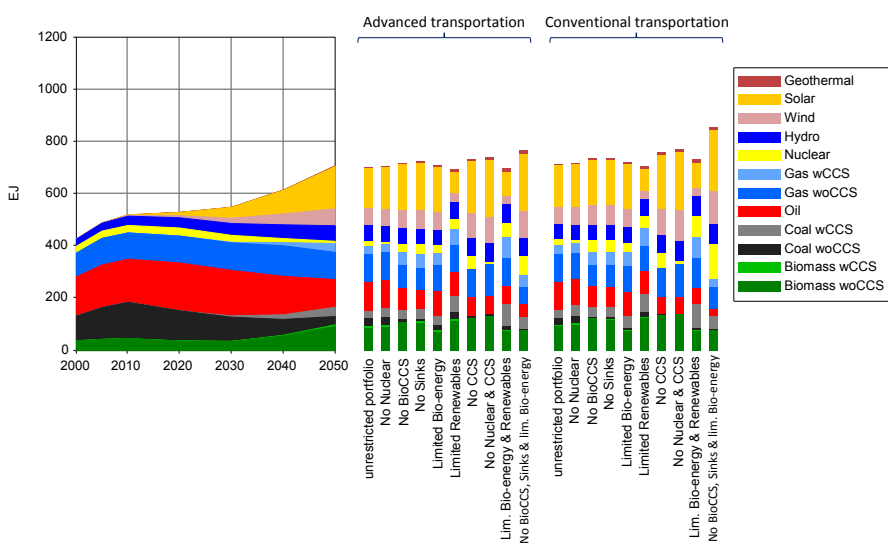
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# Global Primary Energy and from Danube to Caucasus



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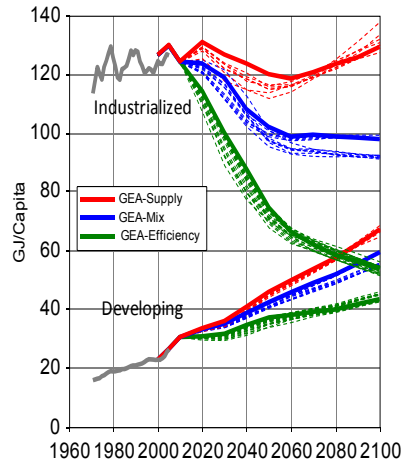
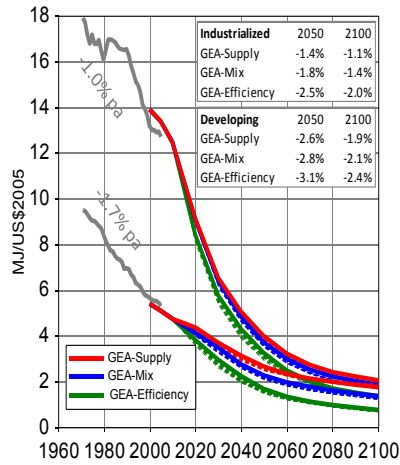
# Global Primary Energy



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# Final Energy Intensity and Per Capita Energy Use



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# Example of savings by reconstruction

Before reconstruction

Reconstruction according to the passive house principle



over 150 kWh/(m<sup>2</sup>a)

**-90%**

15 kWh/(m<sup>2</sup>a)

Source: Jan Barta, Center for Passive Buildings, [www.pasivnidomy.cz](http://www.pasivnidomy.cz), EEBW2006

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## Global Energy Transformations



- Access to energy and ecosystem services (a prerequisite for MDGs & wellbeing)
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## Energy Innovation and Investments



Worldwide, Billion Dollars

	<b>innovation (RD&amp;D)</b>	<b>market formation</b>	<b>diffusion</b>
End-use & efficiency	>>8	5	300-3500
Fossil fuel supply	>12	>>2	200-550
Nuclear	>10	0	3-8
Renewables	>12	~20	>20
Electricity (Gen+T&D)	>>1	~100	450-520
Other* and unspecified	>>4	<15	n.a.
<b>Total</b>	>50	<150	1000-<5000

Notes: \* hydrogen, fuel cells, other power & storage technologies, basic energy research

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