



The Role of Energy in Propelling Sustainable Development in Emerging Economies

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Mapping it out

- Geopolitics
- Alliances
- Investment
- Development

**SUPPLY DIVERSITY
AND SECURITY**

**Gender
and Energy**

ENVIRONMENT
•Sustainability
•Responsibility
•Environment v
Economic growth

**HUMAN RIGHTS
AND
DEVELOPMENT**

- Freedoms
- Progress
- Mobility
- "Rule of Law"

TRADE/GLOBALIZATION

- Access
- Sovereignty
- Communication
- Culture

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What we know...

- Energy is needed for economic development
 - Energy demand growth is fastest **outside** of OECD
- In general, less developed economies use **more** energy/GDP, **less** per capita
 - These change as development progresses
- The energy/environment trade off **is real**
 - Technology, management skill, sound institutions are critical

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...and what we don't

- How do economies develop?
- What are the ultimate boundaries for natural resources?
- What is the potential, and timing, for "disruptive technologies"?

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Experience thus far

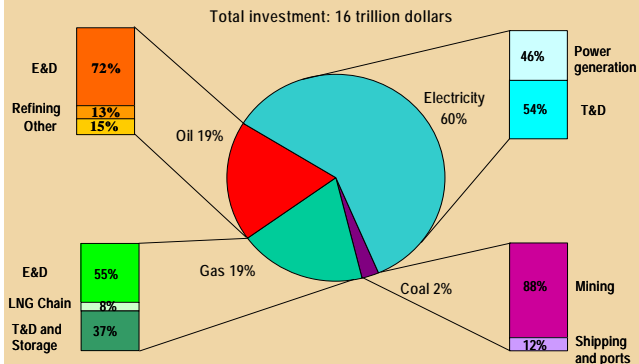
- Large-scale, donor directed projects yield **mixed results**
 - Stakeholder perceptions vary
- Micro-projects and micro-lending are **low impact**
 - Women are a better credit risk
- Hands **on** is better than hands **off**
 - But resource intensive
- **Institutional capacity building** is essential
 - No guarantees of success

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Defining the problem

IEA Global Investment Outlook, 2001-2030



Almost half of total investment is needed in less developed economies.

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UNDP on Gender and Energy

TABLE 2.1 ENERGY MEETS WOMEN'S PRACTICAL, PRODUCTIVE, AND STRATEGIC NEEDS: SELECTED EXAMPLES

UNDP Tool Kit, 2004

Energy Form	Women's Needs and Issues		
	Practical Needs	Productive Needs	Strategic Issues
Electricity	<ul style="list-style-type: none"> pumping water supplies – reducing need to haul and carry mills for grinding lighting improves working conditions at home 	<ul style="list-style-type: none"> increase possibility of activities during evening hours provide refrigeration for food production and sale power for specialised enterprises such as hairdressing and Internet cafes 	<ul style="list-style-type: none"> make streets safer allowing participation in other activities (e.g., evening classes and women's group meetings) opening horizons through radio, TV, and Internet
Improved biomass (supply and conversion technology)	<ul style="list-style-type: none"> improved health through better stoves less time and effort in gathering and carrying firewood 	<ul style="list-style-type: none"> more time for productive activities lower cost for process heat for income-generating activities 	<ul style="list-style-type: none"> control of natural forests in community forestry management frameworks
Mechanical	<ul style="list-style-type: none"> milling and grinding transport and portering of water and crops 	<ul style="list-style-type: none"> Increases variety of enterprises 	<ul style="list-style-type: none"> transport allowing access to commercial and social/political opportunities

Source: Clancy, Skutsch, and Batchelor (2003).

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What do women need?

- Safe, clean, reliable, affordable energy
- The means to develop, gain access to, energy supplies
- Ability to pay
- Technical competencies
- Ability to participate
- In sum, women have the same needs as general populations*

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Defining “a” solution

COMMERCIAL FRAMEWORKS
Best practices

POLICY AND REGULATORY FRAMEWORKS
Role of government, role of business, business-government interactions

COMMERCIAL ENERGY VALUE CHAINS
Economics, technologies, investment
Requirements across the value chains

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Implementing “a” solution

Goal: Improved energy sector governance + local capacity for solutions

LEP-based Activities, Processes & Strategies for Energy Sector Governance

- Build Curriculum for University & Professional Courses
- Hold International Workshops & Seminars
- Produce Public Education Materials
- Develop Journals
- Offer Exchange Programs
- Develop Skills of LEP and in-country
- Share Experience & Knowledge
- Perform Critical Technical Assistance Tasks
- Assist in Institution Building

CEE
Now Era of Oil, Gas & Power
Value Creation/ Smart
Development Initiative

- Select LEP
- Train the trainers
- Transfer Knowledge
- Establish Networking & Mentoring Support

Local
Educational Partner and
LEP
Stakeholders

- Internal Capacity Building
- Public Education
- Technical Assistance

New Sustainable Partnerships and Results

More “value added”

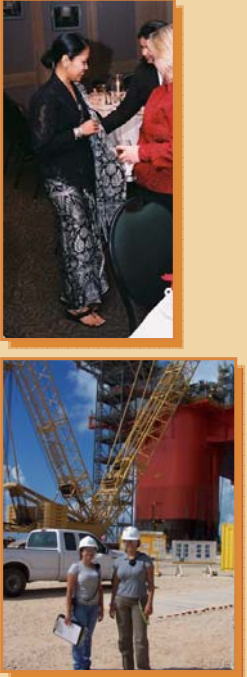
Base Resources

Work Plan

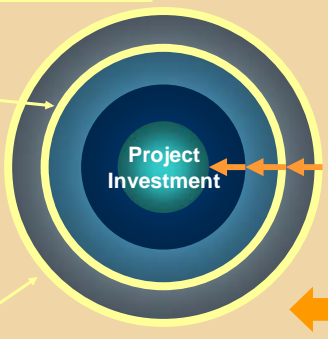
Multiplier Effect

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What about risk?



Traditional
commercial
frameworks
boundary




Project investment
"FEED" and market risk

Country/political
risk

Local, host
community
"soft" risks


New "CF"
boundary



Risk mitigation,
management
pathways

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What about "soft" skills?



Federal
Permitting,
Local Control

Communication,
Involvement

Host
Community

Industry
Record
Going
Forward

Accuracy
Of
Information

Analysis
Of
Hazards

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Persistent energy sector dilemmas

- Pricing energy delivery (petroleum products, natural gas, electricity)
- Pricing environmental protection
- Pricing risk mitigation
- Pricing reliability (= storage)
- Pricing entry of new technology
- *Problems are the same, solutions demand local expertise*

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Conclusions

- Energy sector development assistance is "art" as much as science
- Leadership, managerial skills are key
- Changes are multi-generational
- Expectations should reflect local conditions
- We can experiment

www.beg.utexas.edu/energyecon/IDA