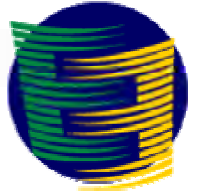




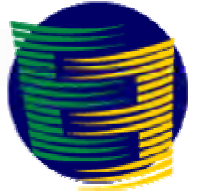
Transfer of Technology in the Energy Sector

By Yulia Selivanova,
Energy Charter Secretariat
Expert Meeting on Cooperation on
Development of Bioenergy
Technologies
10 May, Chisinau, Moldova



Energy Charter's Work on TT

- Basis Art. 8 of Energy Charter Treaty
- Two reports in 2006 – general and energy-specific chapter
- Expert meeting – aim to discuss hands-on experience of companies and governments
- Next steps – case studies

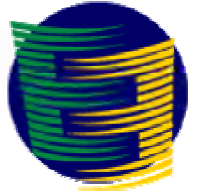


ECT provisions on TT

ARTICLE 8

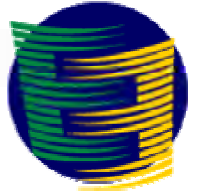
TRANSFER OF TECHNOLOGY

- (1) promote access to and transfer of energy technology on a commercial and non-discriminatory basis to assist effective trade in Energy Materials and Products and Investment (subject to laws, regulations, and IPR protection).
- (2) eliminate existing and create no new obstacles to the transfer of technology in the field of Energy Materials and Products and related equipment and services...



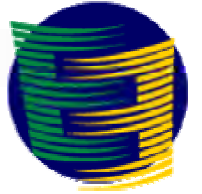
Main conclusions

- Government facilitates TT through policies
BUT
- Industry realizes opportunities
- Common goal between transferor and transferee is important
- Complementary capabilities of partners in projects => commercial attractiveness



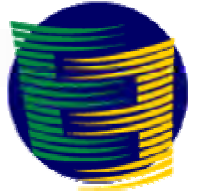
Main conclusions (cont.)

- Diffusion and adaptation of technologies is equally important as transfer
- Adequate level of training necessary
- Especially in management and operation of projects
- Experience with policy and legislative measures is needed to create environment conducive to TT



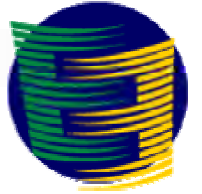
Specificities depend on TT channels

- (i) Sale of equipment and patented know-how
 - (ii) Turn-key projects with performance standards
 - (iii) Large oil and gas exploration projects
(technical, operational and managerial aspects)
- + TT through technical services in energy field



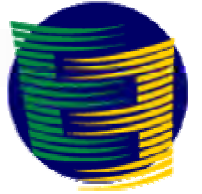
TT through sale of equipment and patented know-how

- Repeat business, replicable technologies
- Patented and available on commercial terms
- Import of equipment
- Production inside the country:
 - (1) by foreign companies;
 - (2) local companies based on license.
- Remuneration from sale – incentive for transferor
- Contingent on economic, political and legal conditions (IPR protection framework)



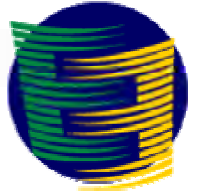
TT in turn-key projects

- Large scale investment with defined performance standards
- Output for domestic consumption
- Commercial attractiveness depends on economic and legal framework conditions in host country
- Investment protection is key
- Availability of capital and financing major issue
- Qualification of local workforce
- IPR protections plays a role but not major



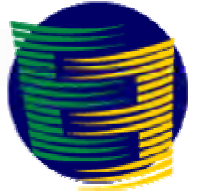
TT in large oil and gas exploration projects

- Transferor – partner in exploration project
- TT as eligibility criteria
- Transferor interested in efficiency of project
- Commercial benefit stems from share in revenues from sale of oil/gas
- Major issue – skills and expertise for project management
- Operator subcontracts most services



TT through skills

- Major challenge in oil and gas projects management skills and expertise
- Reliance on operator managing the project for partners in JV
- Subcontracting of different types of technical services
- Increased reliance on contracted services
- Challenge in coordinating different interfaces of projects



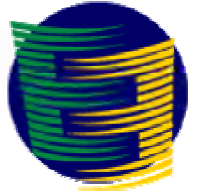
Barriers to TT

(i) Economic

- Economic conditions in sector, fluctuating prices
- High capital requirements, limited access to finance
- Lack of skills and training (technical skills are easier to obtain than operational/managerial)

(ii) Political, legal or regulatory

- Inadequate trade framework (e.g. high tariffs)
- Discriminatory investment conditions
- Lack of adequate IPR protection and general law enforcement
- Regulatory standards (health, safety, environment)



Conclusions

Removing obstacles

- Reduction of trade barriers
- IPR protection
- Improving conditions for investments
- Capacity building
- Enforcing environmental regulations