

Policy pathways in support of EE/RE deployment: barriers, solutions and lessons learned

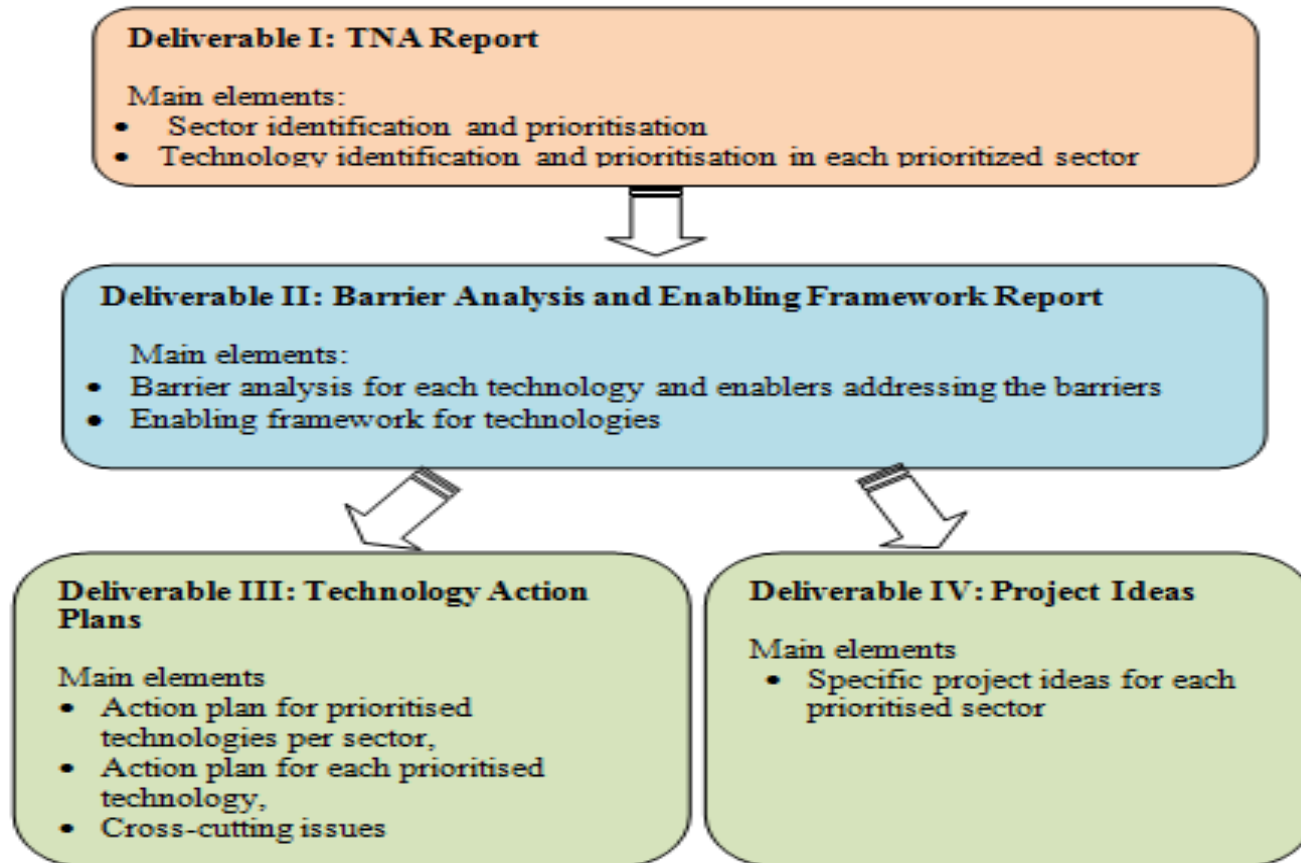
Vladimir Hecl, UNFCCC,
IEA, Policy Best Practices for Accelerating the Deployment of Low-Carbon Energy
and Climate Technologies, 23 September 2014.



Some relevant work of the TEC in 2014

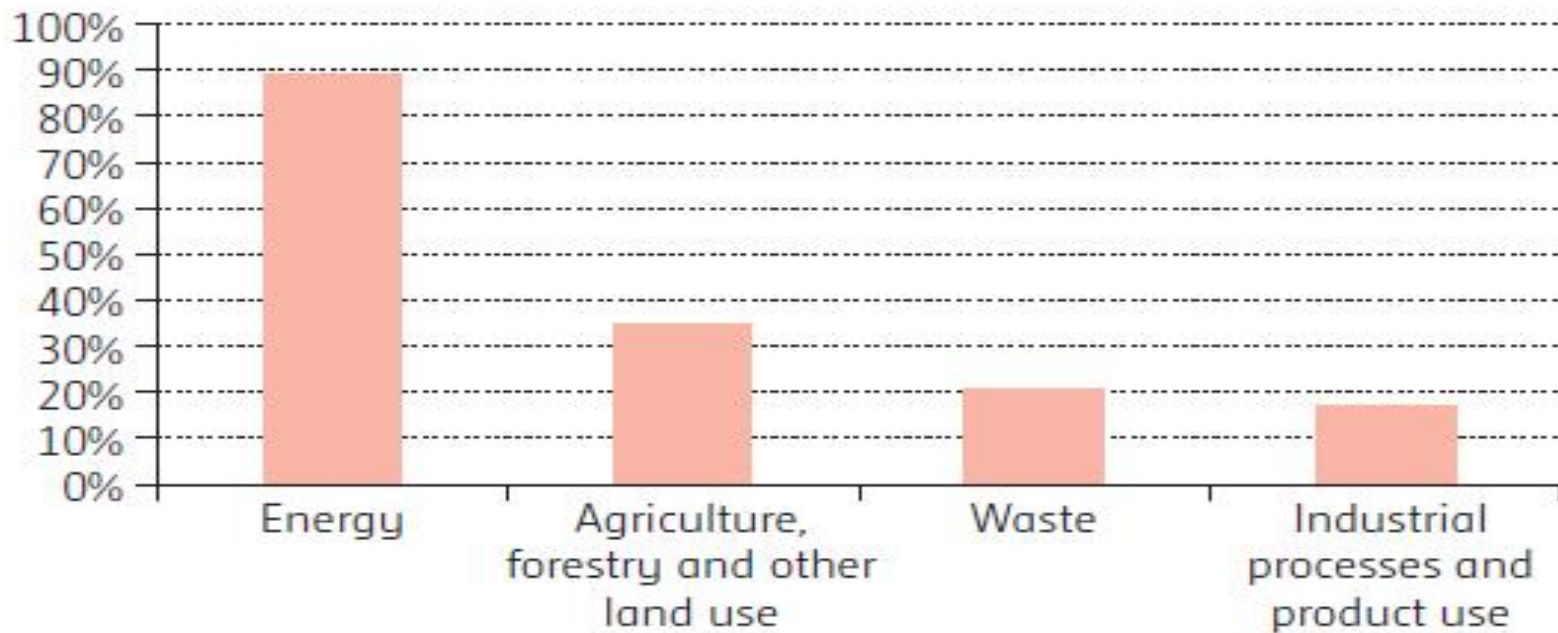
- 1. Technology needs of developing countries**
- 2. Barriers and enabling environments**
3. Technology road maps
4. Modalities on linkages with other institutional arrangements
5. Research, development and demonstration (RD&D)
6. Joint annual report of the TEC and the CTCN
7. TEC information platform (TT:CLEAR)
- 8. Stakeholder engagement**
9. Key messages to COP

Technology needs assessments – deliverables:



I. Prioritization of sectors - mitigation:

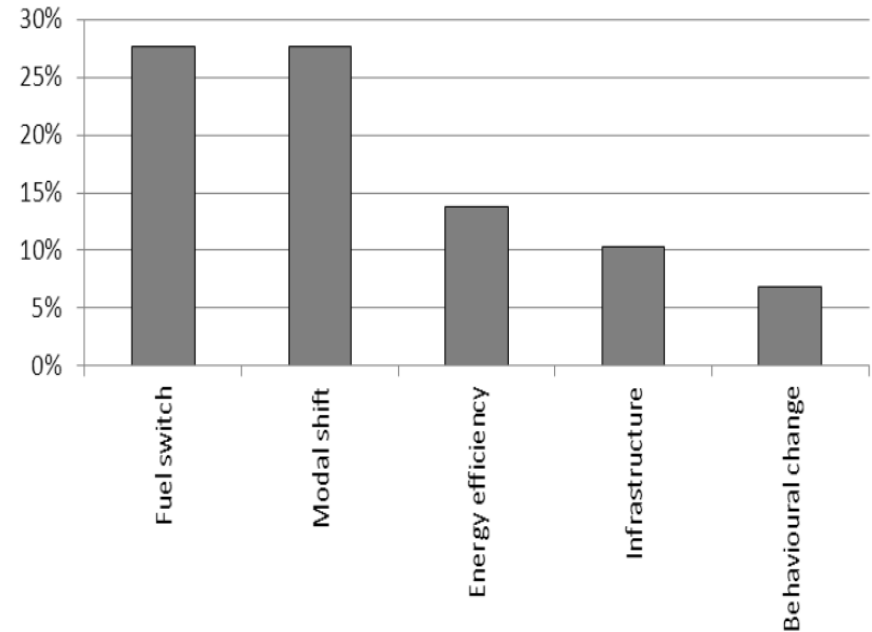
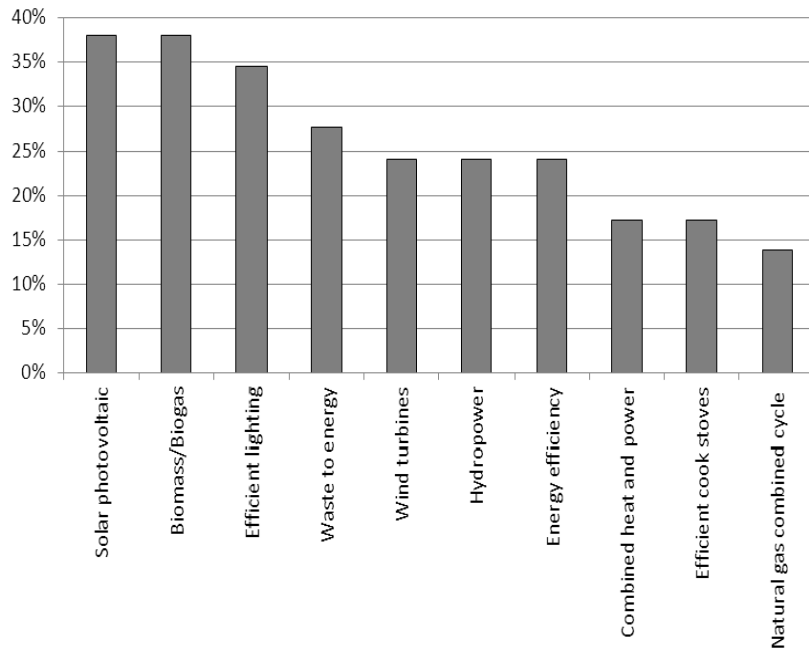
- The energy sector was the most prioritized mitigation sector, followed by agriculture, forestry and other land use sector, and waste sector;
- Within the energy sector, the most prioritized sub-sectors were energy industries and transport.



Technology needs assessments identified by NAI Parties to the Convention

I. Prioritization of technologies - mitigation:

- **Energy industries subsector** - solar PV, wind turbines, SHPP, and CHP (70% RET);
- **Transport subsector** - modal shift, fossil fuel switch technologies and infrastructure improvement technologies;
- **Industrial subsector** - high efficient electric motors and brick production.



Technology needs assessments identified by NAI Parties to the Convention

As of 2014 following TNA reports are available:

ETC:

1. Armenia (2003, part of the upcoming project in 2015);
2. **Azerbaijan (2001, 2012 incl. TAP);**
3. Georgia (2002, 2012 incl. TAP);
4. **Kazakhstan (2013, TAP in 2015);**
5. Moldova (2002, 2012 incl. TAP);
6. **Mongolia (2013 incl. TAP);**
7. Tajikistan (2003);
8. **Turkmenistan (2006, part of the upcoming TNA round in 2015),**
9. Uzbekistan (2001, part of the upcoming TNA round in 2015)

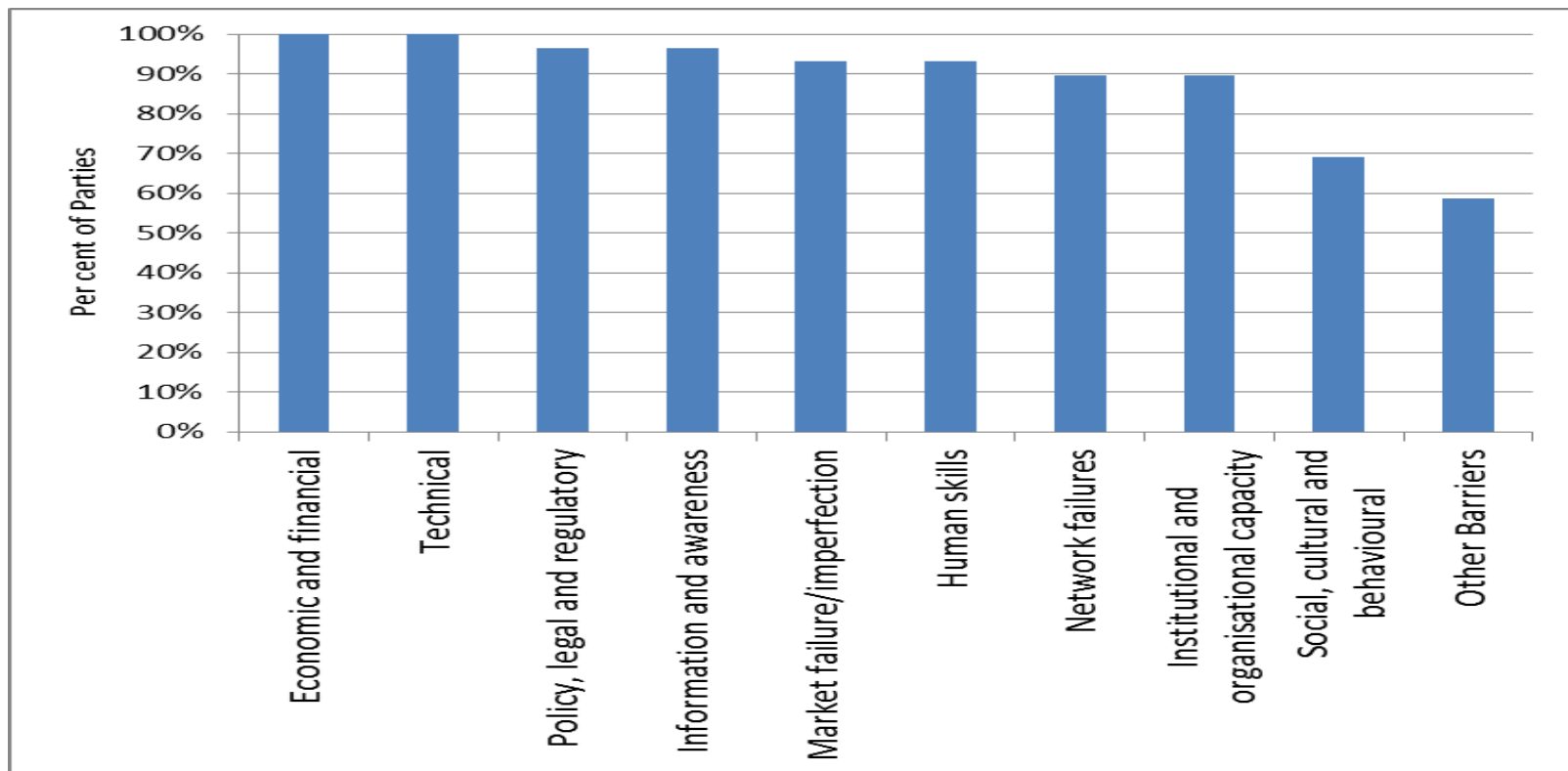
SEMED:

1. Egypt (2001, part of the upcoming TNA round in 2015);
 2. **Jordan (2004, part of the upcoming TNA round in 2015);**
 3. Morocco (2012 incl. TAP);
 4. **Tunisia (2001, part of the upcoming TNA round in 2015)**
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II. Barrier analysis - mitigation:

- The most frequently identified mitigation barriers were economic and financial barriers, followed by technical, policy, legal and regulatory barriers, and information and awareness barriers.



II. Barriers identified by ETC and SEMED Parties in their TNAs (highlight)

All of the characteristics, which are common for the “emerging market” countries, are generally represented:

- **Low liquidity** (as compared to developed markets),
- **Low transparency** of the market,
- Considerable **price fluctuations** that increase risks,
- **Insufficient supporting legislation.**

There are a number of **barriers** of economic, financial, institutional, personnel, organizational, legal and information nature hindering technology transfer and implementation of priority projects. The principle barriers are:

- **Weak financial sector** and absence of the necessary capital,
 - **High transaction costs,**
 - **Low solvency of enterprises and affordability of population,**
 - **Low demand** for environmentally sound technologies,
 - **Inadequate institutional framework,**
 - Low level of **technological and economical awareness** among stakeholders.
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Category specific barriers

Institutional architecture:

- **Legacy of central planning policy,**
- Insufficient coordination between relevant ministries and stakeholders,
- **Governmentally owned energy utilities acting often as national monopolies,**
- Prevailing interests of large energy producers,
- **Limited space for small private owned energy enterprise in the energy.**

Legal:

- **Lack of state policies and action plans** for climate technology development,
- Absence of national standards for energy consumption.

Market specifics:

- **Low rates of reforms in energy sector.**
- Limited scale of EE/RE projects compare to existing traditional fuel oriented infrastructure,
- **Low prices of traditional energy resources,**
- Macro-economic climate – high debts and non-payments,
- **Underdeveloped competition.**
- Lack of business and risk management experience.



Technology needs assessments identified by NAI Parties to the Convention

Technology specific barriers identified in new TNA reports (2012-2013)

Market imperfection

- Installations done in commercial or public sector, while **residential market is not developed**. This is partly due to low income of residents. Need to introduce some cheaper, more affordable equipment.

Network failures

- Donor projects are not linked with each other and **aligned to have a common vision** to reinforce the mutual effect.
- **Culture of consultation with various stakeholders** is missing, including with users of equipment to share their experiences and lessons learned.

Social cultural and behavioral

- Perception of RE technologies necessarily **requiring subsidies and spending**, that often imposes additional burden on public money and hampers economic development.
 - There may be a **need for comprehensive and actual economic analyses** that would show the total effect of RE/EE technology deployment on the macro-economy.
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III. Technology action plans

TAPs recommend an enabling framework for the development and transfer of prioritized technologies at the desired scale.

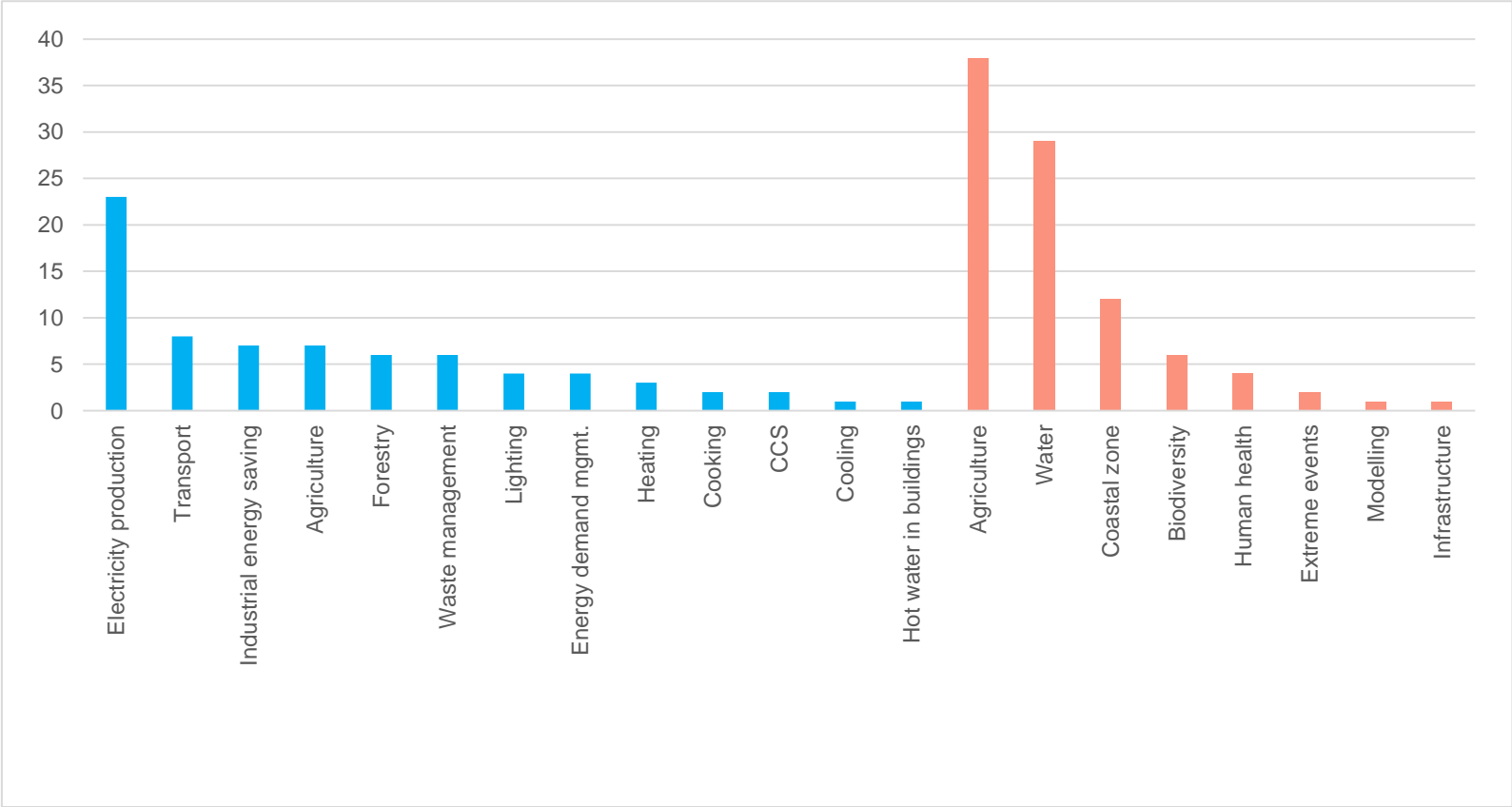
- TAPs contain actions for accelerating the development and transfer of a prioritised technology within the country.
- Parties grouped TAP actions in categories such as:
 - Policy and regulatory actions;
 - Economic and financial actions;
 - Infrastructure requirements;
 - Capacity building;
 - International cooperation actions.

Some of the measures identified by Parties in their TAPs

- **Develop vision and strategy** on national level for EE/RES technologies,
- **Strengthen institutional architecture** (national, regional agencies),
- Develop supporting **legislation**,
- Develop relevant **standards and norms**,
- **Coordination** between market participants
- **Networking** between donors, governments, NGOs and other stakeholders,
- **Conduct pilot project** (test technologies, develop maintenance techniques, promote awareness),
- Develop and employ **special purpose financial products**, credit lines, loans etc.,
- **Train** particular target groups



IV. Distribution of project ideas per mitigation and adaptation sectors.



Technology needs assessments identified by NAI Parties to the Convention

Some experiences and lessons learned from TNA projects implemented

- **Political support** on national or regional level is crucial for TNA implementation,
- **High priority for government and/or municipality** of the proposed project, or particular technologies involved in the project, is very important to gain public recognition and support.
- Interest of and incentive for national stakeholders to **build national capacities** in implementing projects,
- **Availability of domestic public or private funding** is often a key driver behind initial implementing efforts,
- Probability of a successful implementation tends to be high where there is a strong signal from investors regarding the **availability of financing** for the specific prioritized technologies.
- **A high investment and/or low rate of return can hamper the attractiveness** for financial providers to support the project,
- Availability of a pro-active and knowledgeable **project champion** supporting the investment process by its capacity and, if possible, by funds was considered of a paramount importance for the implementation process,
- Creating an efficient **mechanism for delivering targeted information about funding opportunities** linked to prioritized technologies would be an important implementation support factor.



Technology needs assessments identified by NAI Parties to the Convention

Some **success factors** facilitated implementation of the projects from the TNAs:

- Availability of domestic and/or international **funding**,
- Ability to **reach political and institutional consensus** when deciding on implementation priorities,
- **Involvement of relevant state authorities** in the project development **from the beginning**,
- A pro-active and knowledgeable **project champion** by his capacity and also as a source of funding.



Technology needs assessments identified by NAI Parties to the Convention

Some **failure factors**, which prevented projects from implementation :

- **No state authority involved** when proposing the projects which resulted in the lack of ownership of state authorities and hence no interest to implement the proposed projects,
- Environmental issues **not considered a priority**,
- **A high investment and/or low rate of return** of the proposed projects,
- **Low visibility of projects** to possible donors,
- Low attractiveness of some innovative technologies due to **availability of cheaper alternatives**,
- **Unclear ownership** of facilities.



Thank you for your attention

