Green Industry
UNIDO Green Industry Initiative: *from international agenda to local opportunities*

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Outline

- UNIDO Green Industry Initiative
  - Global perspective and justification
    - Environmental challenges
    - Social challenges
  - Scope, definition and benefits
  - Conclusion
Industry & Development Challenges

- Climate change
- Jobs
- Resource Use
- Pollution, chemicals and waste
- Productivity and competitiveness
Climate Change

- Observed Changes
  - Warming of the climate system is unequivocal, as is evident from observations in global average air and ocean temperatures, widespread melting of snow and ice, and rising global average sea level
Climate Change

- Impacts are already with us!
  - Frequency, severity and impact of extreme weather events
  - Declining predictability of weather
  - Prevalence of diseases
  - Drought, desertification and migration
Climate Change: Emissions

Global GHG emissions

 Territory size shows the proportion of the worldwide greenhouse gas emissions emitted there

Global Population

 The size of each territory shows the relative proportion of the world's population living there

Industry contributes around 25% of GHG emissions globally

Source: www.worldmapper.org accessed 28 August 2010
2005 GHG Emissions

World Greenhouse Gas Emissions in 2005
Total: 44,153 MtCO₂ eq.

Sector

Transportation 14.3%

End Use/Activity

Road 10.5%

Industry 25%
Millions of green jobs already in existence

- Focus on economic sectors that are particularly important in terms of:
  - greenhouse-gas emission;
  - use of natural resources for raw material,
  - contribution to the economy and as sources of employment and income

- Six sectors:
  - Energy supply, in particular renewable energy,
  - Building and construction,
  - Transportation,
  - Basic industry,
  - Agriculture
  - Forestry.
Energy supply/ Renewable sources of energy

- More than 2.3 million green jobs have been created in recent years in this sector; however, these only supply 2 per cent of the world’s energy.

- The wind power industry employs some 300,000 people, the solar PV sector an estimated 170,000, and the solar thermal industry more than 600,000, a large proportion of these in China.

- Countries with active policies to promote renewable energy have seen employment surge in this sector.

- In Germany, for example, the number of jobs almost quadrupled to 260,000 in less than 10 years.
Energy supply/ Renewable sources of energy

### Table 2. Estimated employment in the renewable energy sector, selected countries and world, 2006

<table>
<thead>
<tr>
<th>Renewable energy source</th>
<th>World*</th>
<th>Selected Countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wind</td>
<td>300,000</td>
<td>Germany: 82,100</td>
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<tr>
<td></td>
<td></td>
<td>United States: 36,800</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Spain: 35,000</td>
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<tr>
<td></td>
<td></td>
<td>China: 22,200</td>
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<tr>
<td></td>
<td></td>
<td>Denmark: 21,000</td>
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<tr>
<td></td>
<td></td>
<td>India: 10,000</td>
</tr>
<tr>
<td>Solar PV</td>
<td>170,000**</td>
<td>China: 55,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Germany: 35,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Spain: 26,449</td>
</tr>
<tr>
<td></td>
<td></td>
<td>United States: 15,700</td>
</tr>
<tr>
<td>Solar thermal</td>
<td>624,000-plus</td>
<td>China: 600,000</td>
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<tr>
<td></td>
<td></td>
<td>Germany: 13,300</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Spain: 9,142</td>
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<tr>
<td></td>
<td></td>
<td>United States: 1,900</td>
</tr>
<tr>
<td>Biomass</td>
<td>1,174,000</td>
<td>Brazil: 500,000</td>
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<tr>
<td></td>
<td></td>
<td>United States: 312,200</td>
</tr>
<tr>
<td></td>
<td></td>
<td>China: 266,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Germany: 95,400</td>
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<tr>
<td></td>
<td></td>
<td>Spain: 10,349</td>
</tr>
<tr>
<td>Hydropower</td>
<td>30,000-plus</td>
<td>Europe: 20,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>United States: 19,000</td>
</tr>
<tr>
<td>Geothermal</td>
<td>25,000</td>
<td>United States: 21,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Germany: 4,200</td>
</tr>
<tr>
<td>Renewables, combined</td>
<td>2,332,000-plus</td>
<td></td>
</tr>
</tbody>
</table>

*Countries for which information is available.
**Under the assumption that Japan's PV industry employs roughly as many people as Germany’s.
Source: Green Jobs - Towards Decent Work in a Sustainable, Low-Carbon World, UNEP/ ILO/IOE/ITUC, September 2008
Energy efficiency, particularly in buildings and construction

- One of the areas with the highest potential to reduce greenhouse-gas emissions and to create jobs in the process.
- Some 4 million direct green jobs based on improving energy efficiency already exist across the economy in the United States and in certain European countries.
- Buildings currently account for less than one million of this total but could represent a future source of many more green jobs.
Energy efficiency, particularly in buildings and construction

- Buildings are responsible for 30–40% of all energy use, GHG emissions and waste generation.
- Using current technology, high-performance buildings have the potential to cut energy costs by at least 80% compared with traditional building construction.
- Half the economic potential for efficiency gains in buildings is located in developing countries, but no data on existing or potential jobs are available for that part of the world.
Basic industries and recycling

- Industrial sectors such as those of iron and steel, aluminum, cement, pulp & paper account for a large proportion of the use of energy and raw materials, along with greenhouse-gas emissions,

- Greening basic industries: more than 300,000 jobs in iron, steel and aluminum can be considered to have any “shade” of green.
Basic industries and recycling

- The best option for reducing the impact of these industries is through recycling:
  - Secondary steel production, based on recycled scrap, requires 40–75 % less energy than primary production
  - Worldwide, 42 % of output was based on scrap in 2006.
- It is estimated that more than 200,000 jobs across the world are involved in secondary steel production.
- Recycling in all its forms provides 12 million jobs in the three countries for which data could be found (Brazil, China, United States).
- However, recycling jobs should be green and decent.
Conclusion

Thank you very much

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