World Federation of Scientific Workers
International Symposium
A solution for energy, our key to survival:
a view from Russia

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Current Structure of Energy System

Fears & Myths

Real Prices & Dangers

Prospects and Plans: a combination of Renewable and Tradition

The role of scientific community: researches and education
Energy of Russia

Total 1050 M KW/h

Coal & oil: 67%
Nuclear: 17%
Hydro: 16%
Solar, wind, bio, geothermal: <0.1% each

In compare with Spain & Italy ~3%
What think studets about dangerous nuclear energy?

<table>
<thead>
<tr>
<th>Event</th>
<th>Real number of victims</th>
<th>Estimation of students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hirisima</td>
<td>Immediately 210,000</td>
<td>300,000</td>
</tr>
<tr>
<td></td>
<td>Later from 86572 hibakusi – 421 dead</td>
<td>750,000</td>
</tr>
<tr>
<td>Tchernobyl</td>
<td>Immediately 31</td>
<td>40,000</td>
</tr>
<tr>
<td></td>
<td>Later (liquidators and local citizens) ≈ 60</td>
<td>250,000</td>
</tr>
<tr>
<td>Fukusima</td>
<td>0K</td>
<td>?</td>
</tr>
</tbody>
</table>
Tcutomu Yamaguchi the double victim
NSI RAS 3.11.1988 г.
Acad.L.Bolshov
• UNSCEAR 1988 Report, Appendix to annex G, 'Early effects in man of high radiation doses', Acute radiation effects in victims of the Chernobyl accident;


• 100 times
### Victims and Prices of GW (1969–2000)

<table>
<thead>
<tr>
<th>Type</th>
<th>OECD Countries</th>
<th></th>
<th>Non OECD</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Accidents</td>
<td>Victims</td>
<td>Victims/GW</td>
<td>Accidents</td>
</tr>
<tr>
<td>Coal</td>
<td>75</td>
<td>2,259</td>
<td>0.157</td>
<td>1,044</td>
</tr>
<tr>
<td>Coal (China 1994-1999)</td>
<td></td>
<td></td>
<td></td>
<td>819</td>
</tr>
<tr>
<td>Coal without China</td>
<td></td>
<td></td>
<td></td>
<td>102</td>
</tr>
<tr>
<td>Oil</td>
<td>165</td>
<td>3,713</td>
<td>0.132</td>
<td>232</td>
</tr>
<tr>
<td>Gas</td>
<td>90</td>
<td>1,043</td>
<td>0.085</td>
<td>45</td>
</tr>
<tr>
<td>CHF</td>
<td>59</td>
<td>1,905</td>
<td>1.957</td>
<td>46</td>
</tr>
<tr>
<td>Hydro</td>
<td>1</td>
<td>14</td>
<td>0.003</td>
<td>10</td>
</tr>
<tr>
<td>Nuclear</td>
<td>0</td>
<td>0</td>
<td>–</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>390</td>
<td>8,934</td>
<td></td>
<td>1,480</td>
</tr>
</tbody>
</table>
Prospects and Plans: a combination of Renewable and Tradition

Tradition: Oil, Coal, Gas...
Nuclear & Fusion (with great doubts concerned Lunar He3)
Renewable: Solar, Wind, Geothermal, Biogas...
Initially all are SOLAR!
Solar Energy

World Total Power (GW)

Источник: EPIA, Global Market Outlook for Photovoltaics 2013–2017
The role of scientific community:

• Researches & Development... incl. dangers and consequences
• Wide scientific & social discussions
• Education & enlightenment
• Analogies: cars and mobile phones are also quite dangerous things... but we can’t get rid of them...
• Only full scaled technical and regulation measures can made them relatively innocuous and healthy
Thank you!

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