



Ecological and economic analysis of investment projects in the field of energy

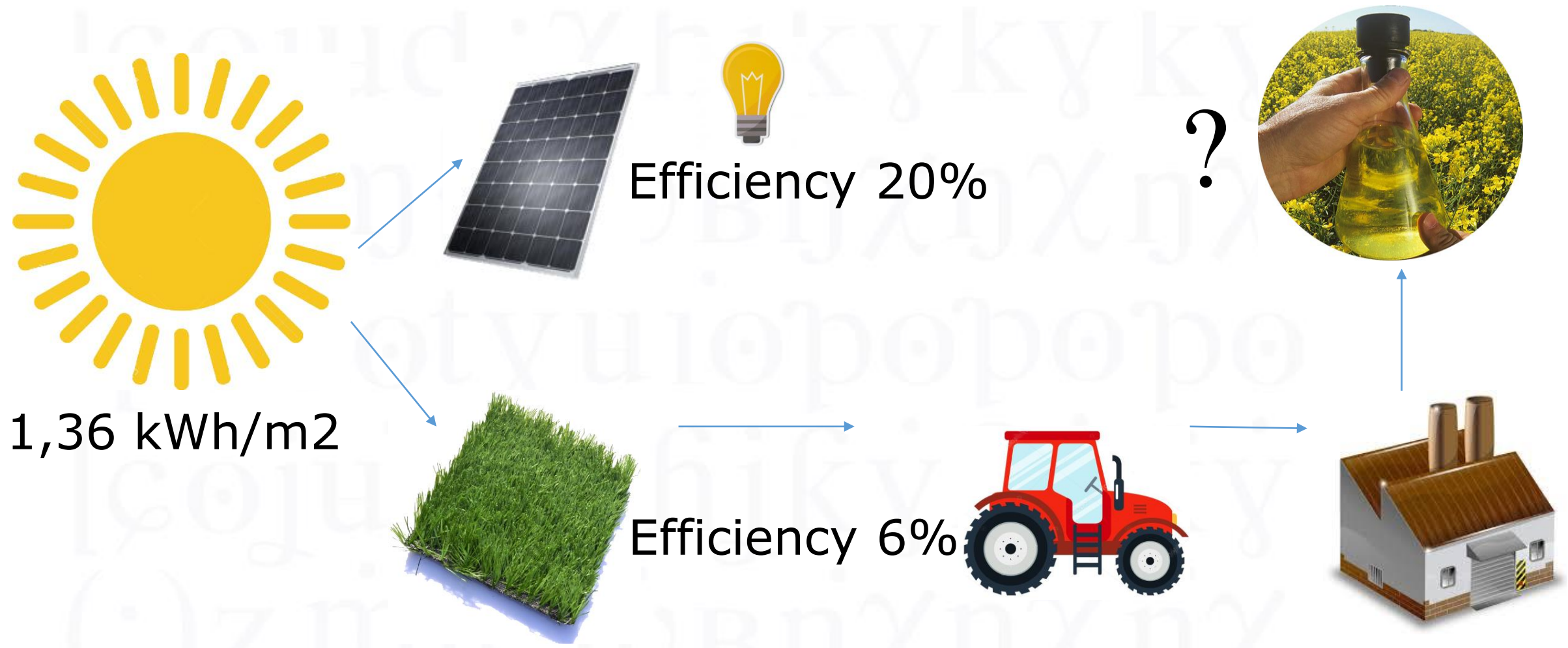
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Photo: Cityx the Future Cities Expo - PSTA

Good and bad sources of energy. What are the rating criteria?



Electric-powered vehicles are useless in cities where electricity is produced from fossil fuels

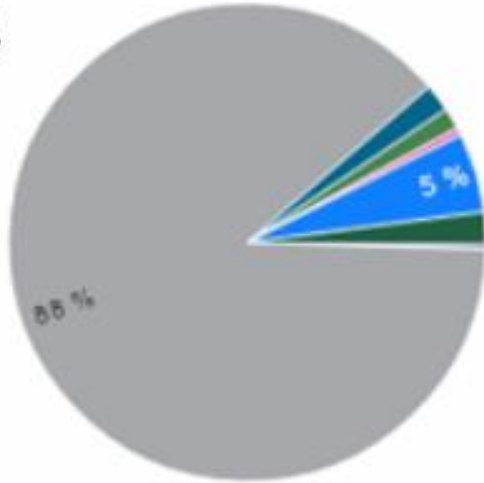
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Krasnoyarsk city, Russia,
Siberia



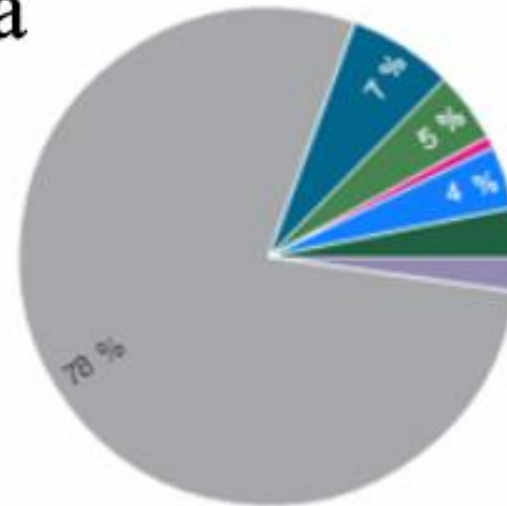
Sources of electric power generation in the biggest countries

China



Oil products	5 Mtoe
Oil	0 Mtoe
Coal	988 Mtoe
Natural gas	21 Mtoe
Biofuels and waste	16 Mtoe
Solar/tide/wind	6 Mtoe
Hydro	60 Mtoe
Nuclear	23 Mtoe

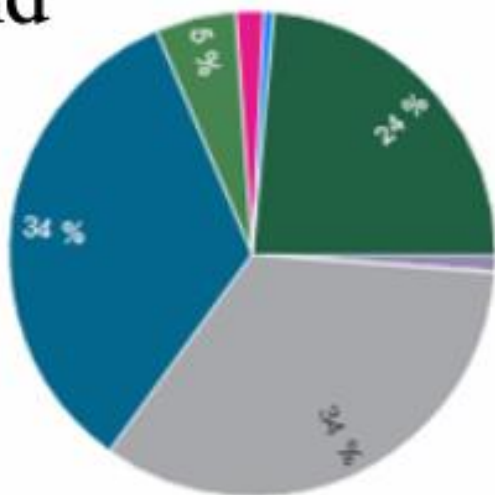
India



Oil products	6.2 Mtoe
Coal	216.4 Mtoe
Natural gas	18.8 Mtoe
Biofuels and waste	12.7 Mtoe
Solar/tide/wind	2.1 Mtoe
Hydro	11.2 Mtoe
Nuclear	8.7 Mtoe

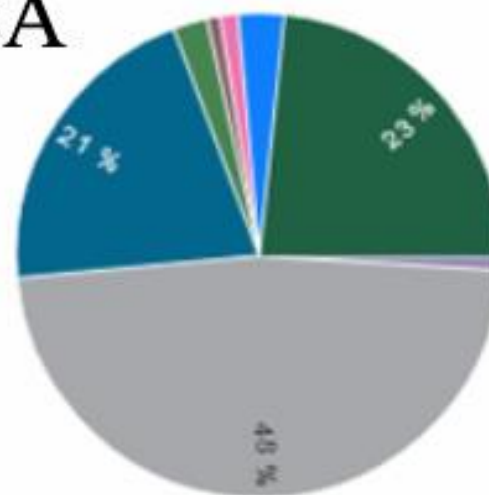
Sources of electric power generation in the biggest countries

England

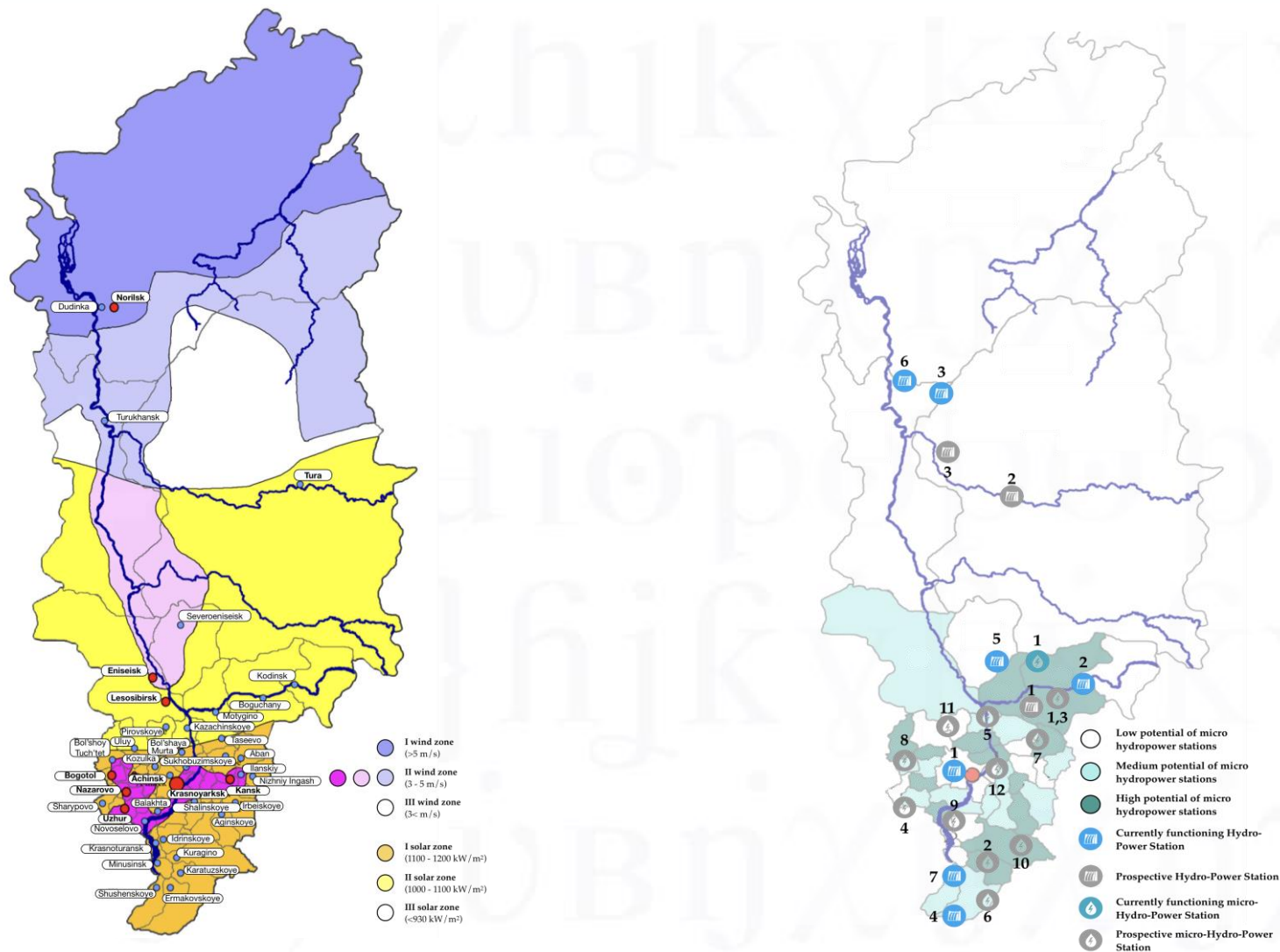


Oil products	0.9 Mtoe
Oil	0.0 Mtoe
Coal	25.8 Mtoe
Natural gas	25.6 Mtoe
Biofuels and waste	4.1 Mtoe
Solar/tide/wind	1.4 Mtoe
Hydro	0.5 Mtoe
Nuclear	18.0 Mtoe

USA



Oil products	9 Mtoe
Coal	436 Mtoe
Natural gas	190 Mtoe
Biofuels and waste	21 Mtoe
Geothermal	8 Mtoe
Solar/tide/wind	11 Mtoe
Hydro	28 Mtoe
Nuclear	214 Mtoe



Solar, wind and hydropower potential in Krasnoyarsk krai

Outlook and policy-making

Per capita energy consumption in developed countries (10 th kWh) is on average 5-6 times higher than in developing countries and 10-26 times higher than in underdeveloped countries.



Criterion to choose the appropriate strategy

The indicator of ecological efficiency may be assessed as:

$$\mathbf{Ie = (C - Cu) / (CF + T) * LT}$$

where:

Ie - indicator of unit ecological efficiency,

C - unit price,

Cu - cost of unit recycling

CF - est. carbon footprint

T - est. toxicity of waste produced during the production cycle

LT - product lifetime span

Criterion to choose the appropriate strategy



The reasons of low carbon footprint of the Russian atomic energy



