

ISEO Renewable Energy Questionnaire			Country														Country ISO Code										
Subject		Total Generation Capacity (MW = 1'000 kW) and Energy Supply (GWh = 1'000'000 kWh)																									
Energy Categories	Note	2000		2005		2010		2015		2020		2025		2030		2035		2040		2045		2050		Maximum *			
		MW	GWh	MW	GWh	MW	GWh	MW	GWh	MW	GWh	MW	GWh	MW	GWh	MW	GWh	MW	GWh	MW	GWh	MW	GWh	MW	GWh		
Biomass (solid direct use)	3.06																										
Biogas	3.07																										
Biofuels (liquid)	3.08																										
Bio-energy cogeneration	3.09																										
Hydro Power	3.11																										
Hydro Pumping	3.12																										
Wave Power	3.11																										
Tidal Power	3.11																										
Wind Power	3.13																										
Geothermal Power	3.14																										
Geothermal Heat	3.15																										
Solar Power	3.16																										
Solar Heat (active)	3.17																										
Solar Heat (passive)	3.17																										
Ocean Power (OTEC)	3.18																										
Ocean Heat / Refrigeration	3.19																										
Heat by Heat Pumps	3.20																										
Muscle Energy	3.21																										
Total Renewable Energy																											

Explanatory Notes: **Left columns:** Generation Capacity in MW for electricity production on and off the grid **Right columns:** Supplied total energy for heat and power

3.06 **Biomass** incl. woodfuels, agricultural energy crops & residues, municipal waste, black liquor, commercial & non-commercial
Woodfuels include fuelwood, forestry and mill residues, energy plantations like willow, poplar, eucalyptus etc. and charcoal & pellets made from such woodfuels
Agricultural energy crops & residues include herbaceous & perennial like miscanthus, reed grass, rapeseed, bagasse, straw, stalks, husks & dung and pellets made thereof

3.07 **Biogas** like landfill & sludge gas, digester gas, gasified biomass etc.

3.08 **Liquid biofuels** like ethanol, methanol, biodiesel, alcohols

3.09 **Co-generation** from any biomass energy systems if not included in the respective figures

3.11 **Hydro, Wave & Tidal** power for electricity production on and off the grid and mechanical power such as for milling and pumping

3.12 **Hydro pumping** capacity is indicative only because it uses electric energy possibly from other sources for hydraulic storage and re-use in peak hours

3.13 **Wind power** including electricity generation on and off the grid and mechanical wind pumps and mills - see wind energy potentials in national wind atlas !

3.14 **Geothermal power** for electricity generation on and off the grid (if there is co-generation include it in 3.15)

3.15 **Geothermal heat** used directly without heat pumps (heat pumps see 3.20)

3.16 **Solar power** from photovoltaic collectors or from solar thermal power generators or solar chimneys on and off the grid

3.17 **Solar active heat** from thermal solar collectors, hybrid PV collectors, solar ponds, salt ponds and for solar dryers, and (next line) **solar passive heat** heat in buildings

3.18 **Ocean power (OTEC)** for electricity generation. It may also produce heat or refrigeration - see 3.19

3.19 **Ocean heat or refrigeration** directly or as calorific component from combined heat & power (CHP) of OTEC

3.20 **Heat produced by heat pumps** utilizing air, water, waste heat, soil etc.

3.21 **Muscle Energy** from humans or animals for transport and mechanical work (which could alternatively be performed by electric or fuel driven vehicles or machines)

* **Maximum** means the maximum possible indigenous energy production for each option beyond 2050

Please return this questionnaire by April 2004 to ISEO, Geneva e-mail: info@uniseo.org or Fax: +41-22-910-3014 For questions call +41-22-910-3006