Appendix A

Table A1.

- Energy:

1) Range of unit size and project size [MW] 2) Nominal efficiency *i) For electricity generation only [%]* *ii) For combined heat and power [%]* 3) Efficiency at partial load 4) Flexibility towards fuel, fuel resource availability, plant siting and infrastructures (e.g. cooling water needs, high voltage, grid gas pipes, etc.) 5) Flexibility towards exploitation: *i) Cold start [minutes from 0% to 90% of nominal power]* *ii) Warm/lukewarm start [minutes from 0% to 90% of nominal power]* *iii) Uncontrollable variation in load [% from nominal power]* **Total energetic score**	Wind turbine 0,75 to 5 MW 100%	Technology 2	Technology 3, etc.

- Ecology and resource use:

1) Exhaust [average in lifetime, including construction & transport]:			

i) CO_2 [kg/kWh$_{electricity}$] *ii) SO_2 [kg/kWh$_{electricity}$]* *iii) NO_x [kg/kWh$_{electricity}$]* *iv) PM_{10} [kg/kWh$_{electricity}$]* *v) NMVOC [kg/kWh$_{electricity}$]* *vi) Methane [kg/kWh$_{electricity}$]* *vii) N_2O [kg/kWh$_{electricity}$]* *viii) C_{14} [kg/kWh$_{electricity}$]* *ix) Heavy metals [most important ones, g/kWh$_{electricity}$]* 2) Thermal exhaust [TJ/GWh$_{electricity}$] *i) Into air* *ii) Into water source* 3) Liquid waste *i) Total liquid waste [kg/kWh$_{electricity}$]* *ii) Total nitrogen into water source [kg/kWh$_{electricity}$]* *iii) Total phosphor into water source [kg/kWh$_{electricity}$]* *iv) Total chlorides into water source [kg/kWh$_{electricity}$]* *v) Total sulfates into water source [kg/kWh$_{electricity}$]* *vi) Others ($KMnO_4$, iron, organic materials, solid materials)[Separately]* 4) Solid waste [tons/MWh$_{electricity}$] *i) Flue dust* *ii) Slurry* *iii) Hazardous waste* *iv) Radioactive waste* *v) Other solid waste* 5) Safety and health impacts *i) Population affected by worst perceived accident during operation [nr of persons]* *ii) Number of deaths over the fuel cycle [persons/MWh$_{electricity}$]*	Total:	Total:	Total:

iii) Other effects 6) Visual impact and noise 7) Footprint and use of resources *i) Primary material moved for construction [kg/kW$_p$ of nominal power* *ii) Secondary material moved for construction [kg/kW$_p$ of nominal power* *iii) Main materials uses for construction (five) [kg/kW$_p$ of nominal power] Total weight – main materials are steel (app. 85%) and glass fiber (app. 15%)* *iv) Primarily material moved for usage e.g. fuel [tons/ MWh$_{electricity}$]* *v) Secondary material moved for usage e.g. fuel [tons/ MWh$_{electricity}$]* *vi) Critical materials in construction and usage (materials that may become a limiting factor for the technology) [kg/kW$_p$ of nominal power]* **Total ecological score**	?? 1. 100-150 kg/kW 2. 3. 4. 5.	1. 2. 3. 4. 5.	1 2. 3. 4. 5.

- Economy (without subsidies, price level for 2003):

1) Investment cost [euro/MW] 2) Availability [hours per year] 3) Operational time [hours of nominal power/year] 4) Reliability [%] 5) Technical life span [years] 6) Construction time [years] 7) Fuel cost [euro/MJ]	800-1000 2000-2500 hours 97-98% 20 0,5 0		

8) Operation and Maintenance (O&M) cost [euro/$MWh_{electricity}$] 9) Waste handling and dismantling [euro/ $MWh_{electricity}$] **Total economic score**	1-1.5 c€/kWh		