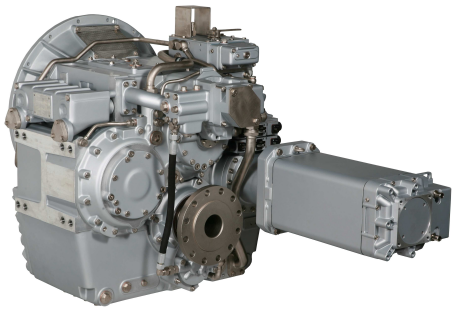
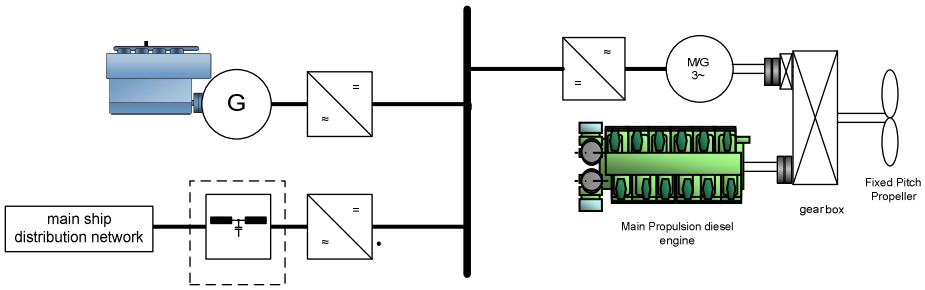
Measures for the reduction of fuel consumption and CO_2 emissions in inland navigation

Template for the catalog-like presentation of the potential measures

(according to the PLATINA Innovation Database)

		Name of the measure described
1.	Keywords	Hybrid Diesel Electric Propulsion
2.	Short description	Hybrid propulsion is the technical term for propulsion systems which is the combination of a mechanical, an electrical propulsion and a service system – however holistically integrated. Key indicators for potential hybrid propulsion concepts are for example big variations in propulsion- and service power demand or the propulsion power is to satisfy very different operating conditions. All those indicators are valid for Inland navigation.  
3.	Objective & target	The main appeal of the system is the optimized utilization of installed power on board. With the combination of both the advantages of Diesel- mechanical and Diesel-electrical drive an overall emission reduction as well as reduced maintenance costs can be achieved.
4.	Key success factors	Main key factor for using this configuration is the use of the installed power in its most optimized operating point in all operating conditions.
5.	Innovative aspects	Latest Inverter- and Permanent Magnet Motor Technology in combination with modern mechanical propulsion components
6.	Benefits for users	With extremely compact electrical components modern hybrid systems do not require radical changes in the machinery layout.

		Name of the measure described
		Optimized overall efficiency by: - Using Diesel Engines in the most effective operating point - Less total installed power - Combination with alternative energy sources possible (Battery, Fuel Cell, photo voltaic etc.) - Easy Integration of Auxiliary Systems (e.g. Elimination of Hydraulics) Lower day-to-day operating cost by: - Fuel savings - Extended maintenance intervals Increased redundancy by two independent propulsion systems per shaft line The technology is already available
7.	Geographic area	Worldwide
8.	Status	Technology already implemented in other ship and transportation applications but with different configurations.
9.	Difficulties met	The time for the return on invest is still too high
10.	Year(s)	Siemens is working with this kind of technology already 15 years. This specific configuration has been developed within the last two years.
11.	Users, stakeholders	Siemens only
12.	Contact person	Christian Norbert Müller, Siemens AG
13.	Costs & financing	
14.	Website / links	www.siemens.com/marine
15.	Available data, publications	Pls. refer to the attached presentation *)
16.	Added value: possibility for application elsewhere	
17.	Further information	
18.	Filled in by	Christian Norbert Müller
19.	Date	17.03.2011

*) Please have a look at the SIEMENS presentation under the rubric **Information provided by workshop participants**