EUROMOT PROPOSAL

12 March 2012

2011 YEARS Promoting Engine in Society

Five Main Topics for ENTSO-E User Group

Main Topic:	Article	Euromot Proposed Text:
1. Definition of generating unit and addition of a minimum capacity threshold	3.6	1. EUROMOT proposes to add a minimum capacity threshold of 80% of the maximum capacity threshold with regards to Generating Units of Type B, C, and D. The categorization of the Generating Units with one maximum threshold can cause a great deviation in the size for the different types of gen-sets within one synchronous area, which would not help in the harmonization effort this network code is aiming. 2. EUROMOT would ask for a further Clarification of generator unit definition.
2. FRT < 110 kV and > 110 kV	11.3 13.3 9.4.c	1. EUROMOT position is that Internal combustion engine based synchronous generating units of Type B and C shall only be required to stay connected to the network during a fault, if the voltage remains during the fault above 30% and if after 150 ms the voltage has returned to or exceeds 70 %. Steady state voltage should not be lower than 90%, for < 110 kV. For > 110 kV , generating units of Type D shall only be required to stay connected if the voltage during the fault remains between 0-20% and if after 150 ms the voltage has returned to or exceeds 70 %. Steady state voltage should not be lower than 90%. The maximum recovery period of the ENTSO-e proposal up to 250 ms is not viable for internal combustion engine based synchronous generators. The proposed area for Fault Ride Through Capacity is too large for technical reasons linked to the inertia of the generating unit. And to significantly increase this is not technically or commercially viable.

EUROMOT

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ENGINE IN SOCIETY

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		Smaller synchronous units will thus have especially big problem to comply with the fault ride through requirements of the ENTSO-E proposal and might not be able to comply for the boundary conditions as is proposed today. EUROMOT further request; The insertion of a new paragraph, with an exemption to comply with the Fault Ride Through requirements, for emergency units or units serving critical processes or infrastructure. Units should be allowed to switch into island operation in the case of a fault ride through occurrence. EUROMOT further request; The insertion of a new paragraph is needed for special ""industrial gas" application which runs on high hydrogen content gases (e.g. syngas or steel gas used in refineries, but not biogas or landfill gas). Such ""industrial gas"" application should be allowed to switch into island operation in the case of a Fault Ride Through occurrence. The current FRT proposal would effectively block these applications as they will not be able to comply. 2. With regard to single-phase and three phase auto-re-closures following a fault on Generating Unit supply lines radial or meshed connection of one or more Generating Units to the public network. It is proposed that this request should only be applicable would the auto-re-closure sequence and timing be within the technical limit of the generator unit according to conditions in a bilateral agreement between the generator unit and the relevant TSO. Especially auto re-closures on radial lines connected to generating units should be avoided as Cumulative torsional stresses on the generator rotor shaft may result in rotor failure.
3. Reactive Power Requirement	12.3	1. The reactive power capability and voltage envelope at PCC is in EUROMOT opinion very ambitious, covering a very wide reactive power area over a very wide voltage range. To provide reactive power at all points will be very demanding and might require generating units to be over dimensioned for unlikely operational contingencies in a way that is not cost effective especially for operation at leading side where a more appropriate limit for the outer frame is a Q/P limit of -0,3...0,45 would correspond more closely to the situation today. The reactive power provision need also a frequency boundary condition especially for operating at over voltage and lagging power factor as a reduced frequency will place a high additional stress on the rotor circuit of a synchronous machine. Proposed frequency boundary 49-51 Hz

4. Frequency Response	2 7.1 9.2 9.5	1. EUROMOT propose to use the term maximum scheduled capacity in lieu of Maximum capacity when discussing frequency response. 2. EUROMOT Propose that Generally for all type of Internal Combustion Generating units independent of class, should the following power reduction be permitted in case of abnormal nominal frequencies: a maximum reduction rate of 10 % of Maximum Capacity per 1 Hz frequency drop below 49.5 Hz.a, as stated already in the code. Less than this value cannot be accepted since this would lead to mechanic and thermal overload of the unit, reducing its lifetime. The text of Article 12.2.b should be applicable to all generation that so require for a stable and safe operation and should not be up to TSO discretion. 3. EUROMOT propose that for Combined Heat and Power applications were heat is a major output of the plant should provide Active Power Frequency Response whenever possible, but limited to the restriction inherent to the type of application. 4. EUROMOT recommends a solution which is more closely following the German Technical Guideline for Generating Plants Connected to the Medium-Voltage Network rules on frequency response rates. Germany defines a maximum of 1.11%/s for engines smaller than 2 Mwe. For larger engines (> 2MWe) 0.33%/s.
5. Compliance test and Simulations	30.2 32.2 27a 24	1. EUROMOT propose that compliance testing should be limited to (FON) or retest only if significant changes are made that would impact its performance with respect to this code. 2. EUROMOT opinion is that, the network code should detail the tests or calculations necessary to show compliance to this code additional testing should not be necessary. EU Standardized methods and or procedures would be welcomed. 3. EUROMOT opinion is that the text of Article 27.2 is too stringent. 4. EUROMOT proposes to add the following to the end of the text, in order to limit the administrative burden and cost that may be related to the Manufacturer's Data and Performance Type Certificate. "The principle of self-certification can be used. By either using a manufacturer's declaration of conformity to this code or a Manufacturers declaration of incorporation, depending on if the generating equipment are supplied as components or sub-assemblies or as complete installations."

EUROMOT is the European Association of Internal Combustion Engine Manufacturers. It is committed to promoting the central role of the IC engine in modern society, reflects the importance of advanced technologies to sustain economic growth without endangering the global environment and communicates the assets of IC engine power to regulators worldwide. For more than 20 years we have been supporting our members - the leading manufacturers of internal combustion engines in Europe, USA and Japan - by providing expertise and up-to-date information and by campaigning on their behalf for internationally aligned legislation. The EUROMOT member companies employ all over the world about 200,000 thoroughly skilled and highly motivated men and women. The European market turnover for the business represented exceeds 25 bn euros. Our **EU Transparency Register** identification number is **6284937371-73.**

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