Draft Guidelines of Good Practice on Grid Connection and Access

ERGEG Public Consultation - Evaluation of Responses

Ref: E09-ENM-16-04a
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INFORMATION PAGE

Abstract

On 24 March 2009, ERGEG launched a public consultation on Draft Guidelines of Good Practice on Electricity Grid Connection and Access (Ref: E08-ENM-09-03). The draft GGP outline a number of proposals to ensure consistent grid connection and access across Member States.

This document (E09-ENM-16-04a) contains the evaluation of responses to the above public consultation and serves as the basis for the final version of the GGP. Annex 3 of this document includes a list of the respondents and an evaluation of the responses received.

Target Audience

The target audience of this document includes energy suppliers, traders, gas/electricity customers, gas/electricity industry, consumer representative groups, network operators, Member States, academics and other interested parties.

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Treatment of Confidential Responses

In the interest of transparency, ERGEG

i) will list the names of all respondents (whether confidential or not) or, alternatively, make public the number (but not the names) of confidential responses received;

ii) requests that any respondent requesting confidentiality submit those confidential aspects of their response in a "confidential appendix". ERGEG will publish all parts of responses that are not marked confidential.

For further information on ERGEG's rules, see ERGEG's Guidelines on Public Consultation Practices[1].

[1] http://www.energy-regulators.eu/portal/page/portal/EER_HOME/EER_CONSULT/E07-EP-16-03_PC-Guidelines_2009-Mar-11.pdf

Related Documents

CEER/ERGEG documents

- "ERGEG Draft Guidelines of Good Practice on Electricity Grid Connection and Access," ERGEG, 11 March 2009, Ref. E08-ENM-09-03, http://www.energy-regulators.eu/portal/page/portal/EER_HOME/EER_CONSULT/CLOSED%20PUBLIC%20CONSULTATIONS/ELECTRICITY/GGP%20Electricity%20Grid%20connection%20%20Access/CD
- "ERGEG Guidelines on Consultation Practices", ERGEG, 11 March 2009, Ref. E07-EP-16-03, http://www.energy-regulators.eu/portal/page/portal/EER_HOME/EER_CONSULT/E07-EP-16-03_PC-Guidelines_2009-Mar-11.pdf
- "ERGEG Final report, The lessons to be learned from the large disturbance in the European power system on the 4th of November 2006", ERGEG, February 2007, Ref. E06-BAG-01-06, http://www.energy-regulators.eu/portal/page/portal/EER_HOME/EER_PUBLICATIONS/CEER_ERGEG_PAPERS/Electricity/2007/E06-BAG-01-06_Blackout-FinalReport_2007-02-06.pdf

External documents

- "Study on the Technical Security Rules of the EU Electricity Networks", PB Power for the European Commission, February 2006, Ref. 62236A/001 REV 2, http://www.docstoc.com/docs/961385/Study-on-the-Technical-Security-Rules-of-the-European-Electricity-Network

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EXECUTIVE SUMMARY

Past experience from critical situations and large disturbances in the European electric power systems indicates a number of drawbacks and problems which originate from the insufficiently coordinated and coherent framework and from insufficiently standardised procedures for grid connection and access. The latter, in particular, has resulted in the lack of a uniform approach for grid connection and access for European grid users, with technical and organisational provisions being diverse. This situation is exacerbated by the growing maturity of the EU electricity market and with the massive deployment of existing and new factors, including among others:

- Distributed generation;
- Intermittent generation; and
- Participation of demand response in network and market operations.

In contrast to the common rules for operational security that have existed for decades in European synchronous areas (e.g. UCTE, Nordel), the issues of grid connection and access have not been addressed in a common way. This is understandable, bearing in mind that grid connection and access were not a critical issue for vertically-integrated utilities as they are today for unbundled grid and market operations. Transmission System Operators (TSOs) and Distribution System Operators (DSOs) are migrating from having a role as infrastructure undertakings towards being user-oriented service providers employing a plethora of new concepts, and interacting with different actors and a variety of independent grid users.

As stated in the ERGEG report on the November 2006 disturbance[2] and in its 2008 and 2009 Work Programmes, ERGEG has undertaken to analyse the needs of, and draft the key concepts for, common grid connection and access approaches throughout the EU electricity grids. This includes designing and consulting upon Guidelines of Good Practice (GGP) on Grid Connection and Access.

The results of previous analyses and studies have been used, e.g. “Study on the Technical Security Rules of the EU Electricity Networks”[3] in ERGEG’s preparatory work.

The first draft of this document was discussed with different stakeholders[4] at a common workshop on 6 October 2008. The issues raised during the workshop were taken into account in the draft GGP on grid connection and access, where appropriate. The public consultation on the draft GGP, conducted by ERGEG from 24 March to 2 June 2009, further sought the views of all interested stakeholders. The public consultation and key positions of various stakeholders were also discussed at workshop on 15. May 2009[5].

[2] “ERGEG Final report, The lessons to be learned from the large disturbance in the European power system on the 4th of November 2006”, ERGEG, February 2007, Ref. E06-BAG-01-06, http://www.energy-regulators.eu/portal/page/portal/EER_HOME/EER_PUBLICATIONS/CEER_ERGEG_PAPERS/Electricity/2007/E06-BAG-01-06_Blackout-FinalReport_2007-02-06.pdf

[3] “Study on the Technical Security Rules of the EU Electricity Networks“, PB Power for the European Commission, February 2006, Ref. 62236A/001 REV 2, http://www.docstoc.com/docs/961385/Study-on-the-Technical-Security-Rules-of-the-European-Electricity-Network

[4] Stakeholders attending the workshop included COGEN Europe, UCTE, NORDEL, ETSO, IFIEC, GEODE, EURELECTRIC, EWEA and EPIA.

[5] http://www.energy-regulators.eu/portal/page/portal/EER_HOME/EER_CONSULT/CLOSED%20PUBLIC%20CONSULTATIONS/ELECTRICITY/GGP%20Electricity%20Grid%20connection%20%20Access/Public%20Hearings

The evaluation of the responses to the public consultation (Ref: E09-ENM-16-04a) contains a detailed analysis of the views received during the public consultation and is the basis for the finalisation of the draft GGP. The evaluation document accompanies the final GGP (Ref: 09-ENM-16-04) contained in this document.

The final GGP on Electricity Grid Connection and Access could in future contribute to the work of the newly established Agency for the Cooperation of Energy Regulators (ACER) when exercising its duties as regards future framework guidelines, in accordance with the provisions of the 3rd Package[6].

Furthermore, the final GGP, together with the accompanying evaluation document, will feed into ERGEG's work on the pilot framework guideline on electricity grid connection, which aims to test the end-to-end process for developing framework guidelines as foreseen in the 3rd Package. Further detailed information on Pilot and ERGEG's overall work on framework guidelines is available at http://www.energy-regulators.eu/portal/page/portal/EER_HOME/EER_FWG .

[6] The 3rd Package proposals for the European Internal Market in Energy included 5 legislative proposals: 2 amended Directives on the Directives of the European Parliament and of the Council amending Directive 2003/54/EC and Directive 2003/55/EC concerning common rules for the internal market in electricity and the internal market in natural gas, respectively; 2 amended regulations on the European Parliament and of the Council Amending Regulation (EC) No 1228/2003 on conditions for access to the network for cross-border exchanges in electricity and Regulation (EC) No 1775/2005 on conditions for access to the natural gas transmission networks; and a new Regulation establishing an Agency for the Cooperation of Energy Regulators. The Package was finally adopted on 13 July 2009. http://eur-lex.europa.eu/JOHtml.do?_uri=OJ:L:2009:211:SOM:EN:HTML For the sake of consistency, this document refers to the old Regulation 1228/2003.

1. Introduction

1.1. Background

1.1.1. Grid Connection and Access

As stated in the ERGEG report on the November 2006 disturbance[7] and in its 2008 and 2009 Work Programmes, ERGEG has undertaken to analyse the needs and draft the key concepts for common grid access and connection approaches throughout the EU electricity grids. This includes designing and consulting upon Guidelines of Good Practice (GGP) on Grid Connection and Access.

The final GGP, together with the accompanying evaluation document, will feed into ERGEG's work on the pilot framework guideline on electricity grid connection, which aims to test the end-to-end process for developing framework guidelines as foreseen in the 3rd Package.

ERGEG's pilot will support the development of the framework guidelines by the Agency, which will provide guidance to the European Network of Transmission System Operators (ENTSOs) to develop network codes.

Beyond that, the specific issues addressed in the GGP include, among others:

- EU-wide common connection principles for generation units, including distributed generation, for consumption units and for DSOs;
- Principles for voltage and frequency quality provisions;
- Ensuring sufficient transparency and information provisions; and
- EU-wide non-discriminatory and fair treatment of all grid users.

The content of the GGP includes:

- General provisions and objectives;
- Roles and responsibilities of different stakeholders and market players;
- General provisions on grid connection and access;
- Technical framework for grid connection and access referring to general aspects, generation, consumption, DSOs and with a special consideration for the exemptions under Article 7 of Regulation (EC) 1228/2003 on merchant lines; and
- Glossary of Terms.

1.1.2. Objectives and Purpose of this paper

On 24 March 2009, ERGEG launched a public consultation on Guidelines of Good Practice on Electricity Grid Connection and Access (Ref: E08-ENM-09-03_Guidelines_on_Grid_Connection _and_Access). The draft GGP outlined a number of proposals to ensure consistent grid connection and access across Member States. The consultation ended on 02 June 2009. Thirty responses were received to this consultation document. A list of the respondents and a detailed Evaluation of the Responses is contained in Annex 3 of this document.

[7] ERGEG Final report, The lessons to be learned from the large disturbance in the European power system on the 4th of November 2006, Ref: E06-BAG-01-06, 6 February 2007

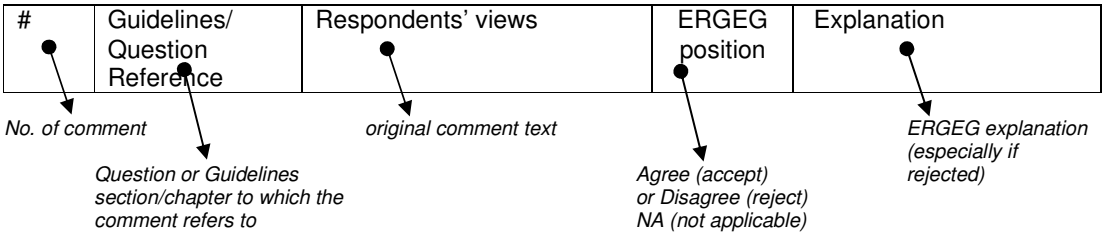
1.2. Recap of ERGEG public consultation

The GGP document was publicly consulted upon in line with the ERGEG rules for conducting public consultations.

The results of the public consultation were evaluated and where applicable integrated into the final version of the GGP, which is intended to serve as input for future framework guidelines on grid connection which may be prepared by the Agency according to the 3rd Package. The framework guideline for grid connection are intended to provide principles upon which the respective codes will be developed by ENTSO-E.

2. Analysis of Responses

ERGEG has evaluated the responses provided during the public consultation, principally in terms of applicability and consistency. For each comment, the following evaluation template has been used:



The comments which were positively evaluated have been incorporated into the final Guidelines of Good Practice for Electricity Grid Connection and Access.

Annex 3 contains the evaluation of all the responses received, organised according to the questions in the public consultation and the topic in the draft GGP. The reference text of the GGP for Electricity Grid Connection and Access is the one from the ERGEG public consultation document (Ref. E08-ENM-09-03_Guidelines_on_Grid_Connection_and_Access). The comments have been quoted with their original format and contents as submitted by the stakeholders. The underlined text means new text proposed to be added, the ~~crossed out text~~ represents text that ERGEG proposed to delete. The evaluation also contains the additional modifications to the GGP proposed by ERGEG following the public consultation, which were not suggested by any organisation or stakeholder, but were additionally recognised as needed and justified by ERGEG.

3. Conclusions and Recommendation

The responses from the public consultation are analysed in Annex 3 and the results have been integrated accordingly into the final Guidelines of Good Practice on Electricity Grid Connection and Access.

Annex 1 – ERGEG

The European Regulators for Electricity and Gas (ERGEG) was set up by the European Commission in 2003 as its advisory group on internal energy market issues. Its members are the energy regulatory authorities of Europe. The work of the CEER and ERGEG is structured according to a number of working groups, composed of staff members of the national energy regulatory authorities. These working groups deal with different topics, according to their members' fields of expertise.

This report was prepared by the Electricity Network and Market Task Force (ENM TF) of the Electricity Working Group (EWG).

Annex 2 – List of abbreviations

Term	Definition
ACER	Agency for the Cooperation of the Energy Regulators
3rd Package	new Electricity Directive 2009/72/EC, ACER Regulation (EC) 713/2009 and new Electricity Regulation (EC) 714/2009 of the European Parliament and of the Council
CEER	Council of European Energy Regulators
DSO	Distribution System Operator
ENTSO-E	European Network of Transmission System Operators for Electricity
ERGEG	European Regulators Group for Electricity and Gas
FG	Framework Guidelines according to the 3rd Package
GGP	Guidelines of Good Practice
HV	High Voltage
LV	Low Voltage
MV	Medium Voltage
NRA	National Regulatory Authority
PSS	Power System Stabilizer
rTPA	regulated Third Party Access
SO	System Operator
TSO	Transmission System Operator

Table 1 – List of Abbreviations

Annex 3 – Evaluation of Responses

Responses Received

Responses were received from the following organisations:

Organisation	Description	Country of origin
Applied Materials	Manufacturer – Photovoltaic equipment	Germany
BDEW	Association of energy and water companies	Germany
CEDEC	European Federation of Local Energy Companies	EU
Centrica Energy	Energy company	United Kingdom
CEZ	Energy company	Czech Republic
DERLab	Distributed Energy Resources Laboratories	EU
E.ON	Energy company	Germany
EDF Energy	Energy company	United Kingdom
ENA	Energy Networks Association	United Kingdom
EnBW	Energy company	Germany
ENDESA	Energy company	Spain
EnergieNed	The Association of Energy Producers, Traders and Retailers in the Netherlands	the Netherlands
ENTSO-E	European Network of Transmission System Operators for Electricity	EU
EPIA	European Photovoltaic Industry Association	EU
ERDF	Distribution system operator	France
EURELECTRIC	Union of the European electricity industry	EU
EWEA	European Wind Energy Association	EU
FRAKO	Manufacturer – Electrical equipment	Germany
GABE	Association of Belgian autoproducers of electricity	Belgium
GEODE	Association of European independent gas and electricity distribution companies	EU
Iberdrola	Energy company	Spain
IFIEC Europe	International Federation of Industrial Energy Consumers	EU
Liander	Distribution system operator	the Netherlands
ODE Vlaanderen	Association of energy companies	Belgium

Organisation	Description	Country of origin
SEPSAS	Transmission system operator	Slovakia
SNCF	Train transport company	France
SSE	Energy company	United Kingdom
SWM	Energy company	Germany
VGB	Association for power and heat generation companies	EU
ZVEI	The German Electrical and Electronic Manufacturers' Association	Germany

Evaluation of Responses

For the sake of better readability, the specific questions raised in the consultation and to which the first group of responses in the table below refer to, are repeated below:

1. Do you agree with the problems these GGP are trying to solve – are there other problems that should be addressed within grid connection and access not yet included in these guidelines?

2. Do these guidelines address the problem – will they lead to more transparent, effective and non-discriminatory grid connection and access?

3. Please outline your views on the description of the roles and responsibilities set out in Section 3.

4. Are the technical framework and general provisions for generation, consumption and DSOs relevant and practical? Is there anything else that should be included / excluded? (Sections 4 & 5)?

#	Q[stn] #	Respondents' views	ERGEG's position	Explanation
1.	1	Agree with the point.	N/A	Whereas the views of the respondents on the issues mentioned here are neutral or even rather affirmative towards the related parts of the GGP, they do not call for any specific action / change in the GGP.
2.	1	A common and coordinated treatment of issues concerning grid connection and access seems a positive step.		
3.	1	EU-wide common connection principles are positive.		
4.	1	Standardised guidelines are welcome.		
5.	1	The issue of regulating the monopoly of system operators should protect the grid users. The harmonisation process should avoid reducing the level of protection that grid users already have in the current (national) regulatory schemes and should be focussed on achieving the highest level of protection available in Member States, or if possible even better.		
6.	1	This document addresses the insufficient real-time information that the system operator receives from the generation units.		
7.	1	The need for such GGP should not be caused by the recent disturbances of grids, which cannot be attributed to a lack of harmonisation in grid access and connection rules.	Agree	GGP may be regarded as input to the future framework guidelines for grid connection. They aim at basis and common rules to the benefit of the European customer. Interaction between grid connection requirements and recent disturbances will be clarified. The effect of the current consultation and the GGP will also be clarified in the GGP.
8.	1	The principle of subsidiarity should be applied regarding grid access and connection. Harmonisation should be pursued with a clear focus on benefits.		
9.	1	It is unclear to which extent the current consultation will effectively contribute to the framework guidelines to be developed later by the Agency, as well as the exact scope of relevant network codes.		
10.	1	The scope of the GGP and their objectives are not entirely clear: although the title of the draft GGP is referring to grid connection and access, it is mentioned that the draft GGP must "minimise the impact of disturbances in European power systems". Grid security and grid connection and access should be dealt with in separate documents.		
11.	1	Some electricity production units are integrated in industrial processes and cannot be operated in the same way as stand alone power plants; they should have specific provisions.	Agree partly	The growing importance of distributed generation and its effect on power system operation– even with low penetration – must be taken into account.
12.	1	Systems smaller than a limit (e. g. 100 kW) should not be covered by the proposed GGP.		

#	Q[stn] #	Respondents' views	ERGEG's position	Explanation
13.	1	Low voltage (LV) and higher levels of voltage should be clearly distinguished when defining connection and access rules.		Referring to subsidiarity, the question of capability of the system to integrate DG while complying with all the relevant operational security conditions must be taken into account. Generation units integrated in industrial processes might not be considered separately without a reference and appropriate consideration of their impact on the operational system security.
14.	1	GGP requirements are important, but there needs to be a balance as to the size of generation unit.		
15.	1	Massive deployment of existing and new concepts including distributed generation, renewable energies and smart grids creates growing problems.		
16.	1	GGP should take into account the development of regional markets and the fast growing locally generated sustainable energy.		
17.	1	GGP is too much linked to the present architecture of the power systems. It should be also robust to possible developments of the architecture of the power systems towards more decentralised generation and control, not systematically separating generation units from consumption units.		
18.	1	Given the expectation that a large number of generation loads will need to be connected over the coming years, it will be essential that clear principles are developed and adhered to.		
19.	1	GGP are also recommended with the purpose to guarantee the maximum penetration of distributed generation without putting in danger system operation and to consider the future needs derived from the implementation of smart grids.		
20.	1	GGP should give common minimum specifications for power quality, interruptions and available information.	Agree partly	A European interconnected electric power system needs common voltage/frequency rules. This is particularly important for systems within one common synchronous area. However, it should be possible to set specifications which reflect the local situation, but it has to be ensured that this does not have an effect to other control areas or endangers overall power system security.
21.	1	Different national requirements on voltage and frequency variations may endanger European power systems.		
22.	1	Harmonisation, standardisation and interoperability should have regard to the economic and technical limitations of each network, e.g. in Europe frequency deviations will be slight so equipment would only need to cope with small variations, whereas in some countries frequency deviations can be much larger. Harmonisation which only required equipment to cope with small frequency deviations would be impractical.		
23.	1	Common clear time frame and responsibilities must be defined in precise processes, for both generation companies and TSO/DSO.	Disagree	The GGP only deal with technical requirements for grid connection and access. Interconnection

#	Q[stn] #	Respondents' views	ERGEG's position	Explanation
24.	1	GGP don't address connections delays due to scarcity of transport capacity, which are barriers for effective access to the grid.		capacity is outside of their scope
25.	1	There is a need for a transparent method to define the maximum interconnection capacity.		
26.	1	Access charges and charging methodology should be included (transparent, non-discriminatory and non-distance related).	Disagree	The GGP only deal with technical requirements, not charges.
27.	2	Most of the issues tackled in the GGP have already been lined out in Germany.	N/A	Whereas the views of the respondents on the issues mentioned here are neutral or even rather affirmative towards the related parts of the GGP, they do not call for any specific action / change in the GGP.
28.	2	Yes		
29.	2	Binding rules lead to legal certainty for the TSO.		
30.	2	Improving the transparency or the governance of the connection process could stifle innovative connection practices and techniques.		
31.	2	Until the future network code is adopted, GGP themselves should be recommended for use by market participants.		
32.	2	Recommendations should be more accurate. Numbers should be provided.	Disagree	The GGP cannot be so precise as they set the key conditions, but not all technical details; the level of detail in the GGP resembles that of the FG; such detailed provisions will be provided within the future codes
33.	2	Grid connection procedure must have comprehensive guidance on all aspects.		
34.	2	GGP implementation will have very different starting conditions among Member States.	Disagree	Different starting conditions cannot be a reason for omitting GGP. On the contrary, since GGP aim at harmonising the conditions for grid connection and access in Europe to the level which is required in order to ensure equal treatment of all European grid users, the different starting conditions should gradually diminish and be replaced by more coherent and compatible ones.
35.	2	No: local market conditions (e. g. much locally generated power) may let DSO face conflict with national rules and efficiency goals.		
36.	2	No: each TSO may still define its own specifications, creating discrimination between grid users among Member States.	Disagree	Whereas ERGEG understands the concern of the respondent, it is at the same time the key purpose of the GGP to ensure that discriminatory and locally-specific specifications cannot be introduced to a degree which obstructs the position of market participants and / or European Electricity Market
37.	2	No: TSO might reduce their constraints and costs by imposing very hard specifications on the grid users, making the connection right ineffective and creating discriminations based on the connection point.		

#	Q[stn] #	Respondents' views	ERGEG's position	Explanation
38.	2	Beware of the TSO/DSO willingness to reduce their own constraints by imposing very strict specifications on the grid users.	Agree	In that respect, the regulators will have to make a close review of TSO specification and see that they comply with these GGP – provisions for that are already contained in the 3rd Package.
39.	2	GGP requirements on real-time data should be qualified such that the data is made available where it is required by the TSO/DSO to run an economical, efficient and co-ordinated system.		
40.	2	TSO/DSO shall make public on their homepages how the grid connection process is timely scheduled, and what role the grid requesting party and the respective grid operator have to fulfil at which point in time (3.3.3 / 4.3.3).	Agree	Publication of procedures and specifications is a condition for transparency and non-discrimination
41.	2	Grid codes should be made available to the public – at least in the local language and in English.		
42.	2	TSO and DSO shall make public on their websites all steps and timing of the connection process, including the role and tasks to be performed at any moment by the grid requesting party.		
43.	2	It must be stated that a legally binding connection agreement for a specific connection point should be agreed upon the parties, and how the costs are shared between TSO/DSO and generator.	Disagree	GGP only deal with technical requirements and costs issues will be deal in another GGP
44.	2	Unless the actual terms and conditions for grid connection and access are not described, transparency, effectiveness and non-discrimination cannot be evaluated.	Agree	All transparency elements are welcome. Furthermore, detailed specifications will be defined for required transparency and will be included particularly in the future framework guidelines.
45.	2	Grid connection and access cannot be treated independently from the capacity situation of the grid.		
46.	2	Grid codes and other technical requirements should reflect the true technical needs for system operation and should be developed in cooperation between TSO, regulators, and industrial stakeholders.		
47.	2	More information exchange between TSO, DSO and generation units should be of great use.		
48.	2	Some key concepts not defined in the Directive should be defined in the GGP, such as Connection, Access and rTPA.	Agree partly	The glossary of the GGP will be revised to include all the most important terms in relation to the electricity grid connection.
49.	2	It is important that the understanding of terms and concepts used is based on a complete and standard glossary of terms.		

#	Q[stn] #	Respondents' views	ERGEG's position	Explanation
50.	2	There may be confidentiality issues e.g. associated with sharing details of connection requests.	Agree	Confidentiality issues – either for security reasons or for commercial reasons will be taken into account in the GGP
51.	2	All data may not be publicly available.		
52.	2	Some TSO data (such as full grid models) should remain confidential and not be handed over on simple request.		
53.	3	Agree	N/A	Whereas the views of the respondents on the issues mentioned here are neutral or even rather affirmative towards the related parts of the GGP, they do not call for any specific action / change in the GGP.
54.	3	The description seems coherent and complete for DSO.		
55.	3	Appropriate		
56.	3	The roles and responsibilities of different stakeholders appear reasonable.		
57.	3	The regulator should be given a specific role in the consultation process.	Agree partly	Section 3.2 of the GGP deals with the role of the regulators. However, many of the views on the issues mentioned here, cannot be implemented as proposed due to the specific legal provisions; these include in particular the way how the FG and codes will have to be developed in the future
58.	3	The regulator should be given a specific role if no agreement can be reached between TSO and DSO.		
59.	3	The regulation authority should conduct all necessary public consultation of users in the elaboration process of grid access' terms and conditions.		
60.	3	National regulators should have the authority and the powers to require TSO to modify terms and conditions for grid connection and access.		
61.	3	European TSO should jointly propose the specifications (ENTSO-E?). Then, the regulatory authorities (the Agency) should jointly adapt and approve them, after having consulted users' grids specialists. Only the Agency might grant derogations based on local specificities.		
62.	3	The assessment of grid code requirements should be made by government bodies or fully unbundled TSO.		
63.	3	Connection procedures shall preferably be elaborated by DSO and approved by regulator.		
64.	3	Specific attention will have to be given to the role of DSO in the new procedure on the development of the framework guidelines.	Agree partly	Co-operation and coordination between the TSOs and DSOs are important and this has been taken into account in the GGP.
65.	3	There is a clear need to strengthen cooperation between DSO/TSO, regulators and industrial stakeholders when drafting grid codes and other technical requirements.		

#	Q[stn] #	Respondents' views	ERGEG's position	Explanation
66.	3	TSO and DSO should cooperate on equal terms.		Nevertheless, for the EU-wide grid connection coherence and harmonisation, the TSOs have a specific role, which is why the level of detail and specification are higher for the TSOs than for other stakeholders referred to in the GGP.
67.	3	GGP doesn't reflect relevant local market conditions. TSO, DSO and generating units should be given a more equal approach.		
68.	3	Terms and conditions should not be set by the TSO or DSO without agreement by the grid user.		
69.	3	It is very important that the technical frameworks developed by the TSO be in a very early state coordinated with the DSO.		
70.	3	Consultation with stakeholders is crucial for the development of fair, objective and non-discriminatory connection and access conditions. It should not be optional.		
71.	3	Growing importance of both distributed generation and smart grids makes a clear need for close cooperation between TSO and DSO.		
72.	3	Requirements for the consultation process and the involved stakeholders need to be defined.		
73.	3	DSO needs explicitly to be involved as grid operators.		
74.	3	The perspective of having many small-scale production units may change the traditional consideration (TSO, DSO, consumer, producer).	Agree	This change is already happening and the related provisions have already been considered to the extent possible in the GGP.
75.	3	Technical requirements for connection to networks should be published in national codes which are approved by national regulators.	Agree partly	Different national legislation/regulations cannot be a reason against the harmonisation of the conditions for grid connection and access in Europe. On the contrary, the need for harmonisation and coherence in grid access
76.	3	GGP should consider that in some countries the national authorities take part in the processes of setting rules and settling disputes, and that some requirements are included in the national legislation. It will be a challenge to harmonise them within the EU.		

#	Q[stn] #	Respondents' views	ERGEG's position	Explanation
77.	3	It is not at all clear where the division will be between national codes and European network codes, since the new regulation on national codes cover largely the entire scope of regulatory issues.		through Europe is the main reason and driving force behind the GGP. Nevertheless, it is well understood that a clear line of split of responsibility and scope will be needed between the national and European grid connection frameworks. This is especially important for the related code as it will be dealing with the most technical details, whereas the FG as such in the future will be less prescriptive for the national rules, as those are (equally as the European codes) of much deeper technical level of detail. In any case, the involvement of the national regulators and other relevant stakeholders is also foreseen within the 3rd Package.
78.	3	Since the contents of the propositions exposing the technical, organisational and financial aspects are different for each grid user, we would be ready to make available only an index of contents for the interested grid users.	Disagree	Section 3.2 of the GGP reflects the legal provisions where role for the regulator has been set. Whereas it is true that the basic obligations (also in the form of FG in the future) are needed for operational security (stability) of the power system, it is also important to address the grid connection issue accordingly, which has so far not been done in an appropriate way and in an EU-wide context. En ex-ante approval (approach) with the future FG (and codes) is not just legally prescribed, but it also ensures practicability and effectiveness for the grid users; in case of ex-post actions, the grid
79.	3	Regulators should provide a general scheme and minimum standards for protection of grid users and the security of the system; where possible grid users and system operators should agree the applicable terms and conditions in bilateral contracts.		
80.	3	Methodologies used to calculate or establish the terms and conditions for connection and access, and of the connection procedures themselves, should rather not be "fixed" or "elaborated" by the regulators, respectively, but only be approved by them.		
81.	3	An additional ex ante approval of the terms and conditions for distribution grid connection and access by the national regulator is neither expedient nor necessary. Sufficient transparency would be ensured through the obligation to publish.		
82.	3	An ex-ante approval by the regulator would imply high bureaucratic costs. The regulator should only monitor the terms and conditions developed and established by the grid operators.		

#	Q^{stn} #	Respondents' views	ERGEG's position	Explanation
83.	3	Regulators should only be able to set basic obligations for grid users where needed for the security of supply and stability of the system.		users would have to wait many months or years to get their cases cleared, as is sometimes the case today.
84.	3	GGP should acknowledge that TSO and DSO should be responsible for good service in terms of power quality and interruptions.	Agree partly	It is indeed the responsibility of the TSOs and DSOs to ensure good service, quality and security of supply. Whereas the issue of service (e.g in relation to the short circuit currents, sufficient capacity of network elements like transformers at the point of connection, etc.) must be dealt with in the related code and a framework for that provided in the relevant FG, the issues of security and quality of supply are addressed in the GGP only from the perspective of grid access; the issues of operational importance are a subject of other work, like e.g. the GGP (or FG) on operational security.
85.	3	GGP should describe what kind of information can be needed from the user by TSO or DSO, for which purpose and under which condition.	Agree partly	Sections 3.5.2 and 3.6.2 deal with providing of information.
86.	3	Settlement of disputes could be done by courts referring to standards and independent experts if necessary.	Disagree	The settlement of disputes is covered by section 4.2.3. It is important that such a procedure exists, but at the same time, all effort shall be invested to try to settle the disputes without the courts, since this would always take much longer to complete.
87.	3	Roles and responsibilities set out in the 3rd Package should be recognised in the GGP.	Agree partly	The future framework guidelines will take into account the amended legislation. These GGP will be used as input to the framework guidelines
88.	3	Where DSO/TSO refuse a connection due to a congestion, they should supply information on the necessary network reinforcement.	Agree	DSO and TSO, as monopoly operators, have to provide justifications on their handling of the requests for connection
89.	3	The data and information that DSO have to provide to the system users for efficient access to the system and for evaluation of connection and access conditions should be limited to details of Network connections and impedances.		

#	Q[stn] #	Respondents' views	ERGEG's position	Explanation
90.	3	DSO shall deliver a proposition to any grid user requesting a connection to the grid, only after having taken into account external constraints such as security of supply requirements, legal and statutory obligations (urban planning law, environmental law)		
91.	3	TSO and DSO shouldn't have an active "police" function because this would increase their costs. Instead, they should have the right to control that users meet the requirements for grid connection and access.	Agree partly	Whereas it is understood that the network operator needs general rules (codes in the future), the specific issue concerning each grid user will have to be checked appropriately, as is also the case today.
92.	3	Without appropriate funding, DSO shall not "oversee" but "require" that all users connected to their grid meet the requirements for grid connection and access (3.4.4).		
93.	3	DSO cannot check every installation. Such requirements have to be adjusted to the category of users and should concern cases regarding grid safety.		
94.	4	A majority of given provisions have already been implemented in well-operated systems.	N/A	Whereas the views of the respondents on the issues mentioned here are neutral or even rather affirmative towards the related parts of the GGP, they do not call for any specific action / change in the GGP.
95.	4	There is nothing to add and nothing to exclude.		
96.	4	GGP are relevant and practical.		
97.	4	More specification should be set by European requirements, for a better harmonisation.	Agree partly	The GGP form the framework for harmonisation on grid connection but construction issues are outside of the scope of these GGP.
98.	4	A number of wide-range recommendations are too general, which may give the impression that they apply identically to all users; they should be adapted to the different categories of users, producer or consumer, according to their power and to their connection voltage level.		
99.	4	GGP should establish common specifications at European level.		
100	4	GGP should go further with authorisations and permissions for the construction of facilities due to their important incidence in connection delays.		
101	4	ERGEG should recommend coordination between different administrations for more agility and flexibility, and give indications about maximum timescales for the construction of network infrastructures.		
102	4	The technical framework should not interfere with existing and well-functioning standards.	Agree partly	Existing different national legislation is not a reason for not harmonising the conditions for grid
103	4	An extreme raise of regulatory burden could endanger improper grid operation.		

#	Q[stn] #	Respondents' views		ERGEG's position	Explanation
104	4	Except in critical state, no specification may impose a user to reduce its consumption or to provide the TSO with services.			connection and access in Europe. These GGP aim to provide input to future framework guidelines. Especially concerning wind, this is going to be the subject of the ENTSO-E work on the specific code during the intermediate period
105	4	GGP should contain only high level principles to ensure full stakeholder and system operator support.			
106	4	Framework guidelines should essentially deliver the upper laying "consistency framework" specifying target objectives without anticipating corresponding solutions. They could cover several specific network codes. One of the most urgent areas would concern the wind generator interface.			
107	4	Decentralised and customised generation which generate their output almost exclusively for one or for a very small number of customers close to them should benefit from some exemption from the principle grid connection rules which take into account the project specifics.			
108	4	The forced curtailment of industrial load may be required but adequate compensation should be paid by the system operator for this service, either in the form of a lower interruptible tariff or a fixed payment per curtailment.		N/A	These GGP address technical requirements, compensation and charges are outside scope of these GGP.
109	4	All services that contribute to grid stability in a normal operating modus or after a disturbed modus should be subject to a bilaterally agreed or regulated services charge.			
110	4	4.1	GGP should include principles of preventing DSO/TSO from charging unspecified/unjustified costs. At least the costs related to reinforcing the grid should be paid by DSO/TSO. A practical compromise would be that core terms could be reviewed by regulators.	Disagree N/A	Access charges and charging methodology are not within the scope of the GGP. This is stated in Section 3.2 of the GGP
111	4	4.1.1	The requirements of a "proper" consultation and the stakeholders to be involved should be defined. The connection procedures shall also be elaborated "after appropriate consideration of stakeholders' interests".	Agree Agree	Included in Section 4.2.1of the GGP Included in Section 4.2.1 of the GGP
112	4	4.1.3	Where needed, regulators should also adapt the connection contract models and then approve them. Contract models should only come into effect when agreed upon by the grid user.	Disagree	Contract models and general terms and conditions must adhere to the legal provisions.

#	Q[stn] #	Respondents' views		ERGEG's position	Explanation
113	4	4.1.4	It should be clear in the procedures whether there are rules whereby newer units can jump ahead of older units waiting for connection.	Agree	This has been added in Section 4.2.1
			GGP should include the ongoing and up-to-date publication of connection timescales by TSO in order to facilitate transparency.	Agree	This has been included in Section 4.1.5
114	4	4.1.5	Connection procedures should define not only the information and data requirements but also the access charges and charging methodology to facilitate transparency and ensure treatment equality.	Disagree	Access charges and charging methodology are not within the scope of the GGP.
115	4	4.2.1	It is unclear what provisions should apply when making changes to connection and access arrangement for existing and unchanged units.	Agree	This will be more clearly stated in GGP.
			Plant capability may change temporarily due to technical limitations or permanently due to replacement of obsolete systems or components. In such circumstances, the installation owners should be obliged to inform the TSO of plant shortfalls and procedures followed to restore compliance or seek derogations as appropriate.	N/A	Not addressed in these GGP; this is part of operational security
			The technical connection features of existing installations shall be retained, not all technical features they had when they were connected to the grid.	Agree	Section 4.2.1 has been slightly modified
			It is confusing to mention a no change in contractual arrangements.	Agree	Section 4.2.1 has been modified accordingly
			There is a need to clarify if any additional tests are required, probably in connection agreements.	Disagree	Section 4.2.1, together with 3.3.4 and 3.4.4,are taking this remark into account
			What are these regular tests aiming to verify? Who should do them if they are over and above the maintenance/inspection requirements?	Disagree	See Sections 5.2.6 and 5.3.6
			What in particular is meant by "the DSO shall follow this provision acting swiftly and without delay"?	Disagree	No need for further explanation

#	Q[stn] #	Respondents' views		ERGEG's position	Explanation
116	4	4.2.2	The design of the technical solutions for connection should rather be the result of a mandatory process of cooperation between DSO/TSO and system manufacturers and integrators.	Agree	Section 4.2.2 has been modified accordingly
			Grid user should be involved in the process of designing the technical solution for connection.	Agree	Section 4.2.2 has been modified accordingly
117	4	4.2.3	Any provision granting powers to an expert should be examined carefully, taking into account national legislation for disputes.	Agree	Section 4.2.3 has been modified, important is that there is procedure for this
			Systematic check for all installations through regular tests is difficult to implement on a distribution network, regarding the number of users. It could be planned for generation units above 5 MW.	Agree	Section 4.2.3 has been slightly modified
			Whilst dispute is in progress, having an expert is a waste of time, as it will probably be appealed to the Regulator.	Agree	Section 4.2.3 has been slightly modified
			Is the compliance verification a paper exercise or is physical testing required?	N/A	See Sections 5.2.6 and 5.3.6
			Is the compliance checking at the time of connection only?	N/A	See Sections 5.2.6 and 5.3.6
			Does verification depend on data / info provided by the customer?	N/A	See Sections 5.2.6 and 5.3.6
118	4	4.3	TSO/DSO should have the obligation to inform users about incidents as soon as possible (interruptions, dips, transients…), including measurement data, causes and actions planned.	Disagree	The GGP address grid connection requirements and these issues are related also to system operation and operational security

#	Q[stn] #	Respondents' views		ERGEG's position	Explanation
119	4	4.3.1	Instead of harmonics emissions we prefer to use flicker	Agree partly	Flicker thresholds might be used in addition
			Relevant technical requirements should be subject to at least a basic European standard specification.	Agree	Section 4.3.1 has been modified accordingly
			TSO should also provide the electrical models both for dynamic and static simulations.	Disagree	Sections 3.3.2 and 3.4.2 set the indirectly related requirements, reference to such models is not considered relevant.
			Who establishes the technical requirements? They should not be set unilaterally by TSO/DSO and should be harmonised to at least the highest level of protection for grid users.	Disagree	Technical requirements are set by system operators. Co-operation between SOs is needed.
			Existing European or national rules and standards must be considered in this regard.	Agree partly	See also Section 4.2. Section 4.3.1 has been modified accordingly
			Could compliance with power quality requirements be mentioned?	N/A	This is outside of the scope of these GGP

#	Q[stn] #	Respondents' views		ERGEG's position	Explanation
120	4	4.3.2	The term "significant generation unit" shall be defined.	Agree	Glossary has been completed accordingly
			The term "significant consumption unit" shall be defined.	Agree	Glossary has been completed accordingly
			It should be explained or suggested what "significant" means for generation or consumption units.	Agree	Glossary has been completed accordingly
			The technical data to be provided by generators or consumers should be listed. TSO should not use technical data as a barrier, by requiring information usually not provided by the manufacturers.	Disagree	Technical data are part of terms, conditions and procedures for connection (see Sections 3.3.1 and 3.4.1)
			Significant units could be identified as in the respective grid codes.	Agree	Glossary has been completed accordingly
			The term "significant" could be defined by the TSO/DSO.	Agree	Glossary has been completed accordingly
			"Operational security" should be defined.	Agree	Glossary will be completed accordingly
			Real time date should be made available where it is required by TSO/DSO to run an "economical, efficient and co-ordinated system".	Agree	Section 4.3.2 has been modified accordingly
121	4	4.3.3	Except, either in critical state or on voluntary contractual base, TSO may not impose consumption constrains on a consumption unit.	Agree	Section 4.3.3 has been modified accordingly
			This requirement could be interpreted in a wide range.	Agree	Section 4.3.3 has been slightly modified
122	4	4.3.4	TSO/DSO also needs to agree appropriate timing of data exchange.	Agree	Section 4.3.4 has been modified accordingly
123	4	4.4	TSO/DSO should be obliged to agree with the consumption or generation unit about the time and duration of any planned access limitation.	Agree	Section 4.4.2 has been modified accordingly
124	4	4.4.1	Is the limitation of the injected power due to network congestion meant? If yes, the GGP shall also mention that suitable and transparent methods for estimating the extent of the limitation shall be used.	Agree	Section 4.4.1 has been modified accordingly

#	Q[stn] #	Respondents' views		ERGEG's position	Explanation
125	4	5	It is not acceptable that GGP seem, in many case, to give the TSO/DSO the authority to set, specify or define all kinds of requirements for grid users unilaterally and without any restrictions.	Agree	Requirements are part of terms, conditions and procedures for connection (see Sections 3.3.1 and 3.4.1) to ensure secure network operation. These requirements will be overseen by the regulators and TSO/DSO shall consult grid users when setting these requirements. Therefore no changes in the GGP are considered necessary, as all necessary care will be taken to deal appropriately with this issue.
126	4	5.1	Relevant technical requirements should be subject to at least a basic European standard specification.	Agree	
127	4	5.1.1	It is of high importance to harmonise the upper and lower frequency limits of distributed generators in the medium and low voltage distribution grid: The majority of distributed generators should not switch off above 47.5 Hz, if possible.	Agree partly	This is already taken into account in 5.1.1.2 and the term "significant" has also been defined now.
128	4	5.1.1.3	Co-determination will cause a huge effort of coordination.	Agree	ENTSO-E has been created for this purpose also and it has been recognised that more co-ordination is needed for integrated European market
129	4	5.1.1.4	The range of variation should be wider than nominal / than normal.	Agree	Section 5.1.1.4 has been completed accordingly
130	4	5.1.2	Any deviation from EN50160 would contribute to the system's instability Each DSO should be able to define voltage levels and equipment independently from TSO, taking into account national and international standards and the local situation.	Agree Agree partly	Section 5.1.2.2 has been completed accordingly Such independence shall not, however, have an effect on other DSOs or TSO systems
131	4	5.1.2.2	If the equipment has not been designed to cope with the voltage variations, it will be damaged, and hence will not have to comply with this clause… Co-determination will cause a huge effort of coordination. The range of variation should be wider than nominal / than normal	Agree Agree Agree	ENTSO-E has been created for that purpose and it has been recognised that more co-ordination is needed for integrated European market Section 5.1.2.2 has been completed accordingly

#	Q[stn] #	Respondents' views		ERGEG's position	Explanation
132	4	5.1.2.3	"Withstand voltage for specified time period under given frequency (according to the applicable standard)" is not clear. Technical framework for grid connection interferes strongly in the existent and functioning system of engineering standards. This will cause many competence problems.	Agree Disagree	Section 5.1.2.3 (4) has been slightly modified Existing different national legislation is not a good reason for rejecting harmonisation of conditions for grid connection and access in Europe. These GGP rely on European standards already existing.
133	4	5.1.2.4	National rules and standards should be considered. New criteria are not necessary. Technical framework for grid connection interferes strongly in the existent and functioning system of engineering standards. This will cause many competence problems.	Disagree	Existing different national legislation is not a good reason for rejecting harmonisation in Europe. Integrated market needs certain level of harmonisation. Different engineering standards are not a good reason for rejecting harmonisation
134	4	5.1.3.1	It is not clear what "respectively grids" means. The requirement should be related to significant generation units only. Further analysis would be needed to establish what protection would be justified.	Agree Disagree	Section 5.1.3.1 has been modified accordingly Protections are not only there to protect the system, but also components and people
135	4	5.1.3.2	The prevention of non-selective activation should be only "as far as reasonably practicable".	Agree partly	Section 5.1.3.2 has been modified
136	4	5.1.3.3	The concept of "back-up" should be defined. Back-ups should not be generalised, especially for LV generation and consumption units. Unnecessary duplication of protection systems should be avoided.	Agree Agree partly Agree	Glossary has been updated accordingly Back-up devices should be implemented always if it is possible that primary protection does not work because security of supply and safety of electrical equipment shall be ensured at any time.

#	Q[stn] #	Respondents' views		ERGEG's position	Explanation
137	4	5.2	A distinction should be made between production units which are integrated in industrial processes and stand alone power plants. Any extra investment by generators to the benefit of the grid stability should be bilaterally agreed between TSO/DSO and the generating unit and financially remunerated. In case an agreement is not achievable, the regulator should establish rules for such an investment and define a method for remuneration.	Agree partly Agree partly	Production units integrated in industrial processes may be given specific provisions only if they are galvanically isolated from the public grid of TSO/DSO The GGP specify the minimum required criteria. Charges,The etc. are not the scope of these GGP.
138	4	5.2.1	Technical requirements on generators should be appropriate to the generation technology and should not detract from the competitiveness of the generator. This is particularly relevant to renewables, which may not be able to provide all types of ancillary services. Not only synchronous generators, but also converter based systems should be subject to clear definitions. Significant unit should be defined as unit providing ancillary service.	Agree partly Agree Agree	GGP mention the generation technology as a factor for distinct treatment, however, non-discrimination and equal treatment shall be taken into account Glossary has been completed accordingly (significant unit is not only the one providing ancillary service)
139	4	5.2.1.1	The power control equipment should be mandatory only for units providing ancillary service.	Agree	Has already been taken into account in the GGP with the wording "where appropriate"

#	Q[stn] #	Respondents' views		ERGEG's position	Explanation
140	4	5.2.1.2	This point is not suitable for all generators (e.g. inverter-based generation units). Such a requirement results in a high contribution to short-circuit currents and may, in some cases, pose some problems.	Agree partly	Section 5.2.1.2 has been modified, however, maintaining stability must remain a priority
			This prescription cannot be applied to generation units with electronic power inverters: their reactance is very high during a fault.	Agree partly	Section 5.2.1.2 has been slightly modified, however, stability has to be maintained
			The generator reactance should not be required as low as possible; it is necessary to consider also fault currents – short circuit resistance of the equipment and collective remote control signal influence.	Agree partly	Section 5.2.1.2 has been slightly modified however, stability has to be maintained
			A synchronous generator has a number of defined reactances, among other parameters that can contribute to stable power system operation. TSO may accept different parameters where these can be shown to have no adverse effect on the transmission networks.	Agree partly	Section 5.2.1.2 has been slightly modified, transient and sub-transient reactance are the most important for the stability considerations
			There should be a balance depending on the network, between having a low generator reactance to assist in stability and a high reactance to limit short circuit currents.	Agree	Section 5.2.1.2 has been slightly modified
141	4	5.2.1.3	The definition of a "generator" should be given.	Agree	Definition included in glossary
			Both clauses should apply to the relevant SO.	Agree	Section 5.2.1.3 has been completed accordingly
142	4	5.2.1.4	System operators should only be able to define the situations in which the step-up transformer operate, not the design.	Agree	Section 5.2.1.4 has been slightly modified
			SO should only influence parameters affecting the total system.	Agree partly	Section 5.2.1.4 has been slightly modified

#	Q[stn] #	Respondents' views		ERGEG's position	Explanation
143	4	5.2.1.5	GGP should not refer to a PSS device as only the functionality is required. GGP should require generators to be equipped with systems suitable to damp voltage and power oscillations.	Agree	Section 5.2.1.5 has been modified accordingly to be more general
			Not all significant generating units need to be equipped with PSS, but only a smaller number in peripheral areas of a synchronous zone.	Disagree	All significant generators have an influence to system stability, not only those in peripheral zones
			May no 'significant' generators be connected to a DSO system?	Agree	Section 5.2.1.5 has been completed accordingly

#	Q[stn] #	Respondents' views		ERGEG's position	Explanation
144	4	5.2.1.6	There should be no requirement for a generating unit to remain connected outside of the defined envelopes. However generators may let to know enhanced capabilities.	Agree	Section 5.2.1.6 has been modified accordingly
			An industrial site should be able to disconnect from the grid a part of its internal network with its critical loads and its local generation, as soon as either the voltage wave might make the grid become unable to supply correctly these loads. GGP may impose that this disconnection does not increase the power taken from the grid.	Agree partly	For industrial sites apply the requirements set in Section 5.2.5, no specific provisions are needed
			For industrial grids, where consumption units can be combined with local power production units, GGP should enable disconnection from the public grid as soon as the voltage wave suggests that the public grid might become unable to supply electricity within specified quality criteria.	Agree partly	For industrial sites apply the requirements set in Section 5.2.5, no specific provisions are needed
			Generation units should remain connected as required by the DSO/TSO under the circumstances outlined in the grid code.	Agree	Section 5.2.1.6 has been modified accordingly
			There needs to be a limit beyond which such considerations do not apply to DSO connected generation.	Disagree	The provision seems to be fair
			It is not clear how re-connection after tripping is to be coordinated.	Agree	Section 5.2.1.6 has been modified accordingly
			This requirement should not be written without full consideration of costs, benefits, and technology.	Disagree	The provision seems to be fair
			Who decides if the 'as long as possible' criteria is satisfied?	Agree	Section 5.2.1.6 has been modified accordingly

#	Q[stn] #	Respondents' views		ERGEG's position	Explanation
145	4	5.2.1.7	Using same gradients across Europe would create a better situation for manufacturers.	NA	This is part of the characteristics of the grid. Co-ordination ensures the most harmonised situation
			Are all units concerned? Is it reasonable for LV units?	NA	Depending on the grid, all units may be subject to such phenomena
			Short circuits do not create transient frequency events.	Agree partly	Section 5.2.1.7 has been modified accordingly to clarify the wording here
			DSO, not TSO, should determine such parameters for distribution systems.	Agree partly	Section 5.2.1.6 has been completed accordingly, there should be co-ordination
146	4	5.2.1.8	This point is not suitable for all generators (only for rotating machines).	Disagree	All generators experience stress from faults, however, Section 5.2.1.8 has been modified
			Is the issue of out-of-phase reclosing covered under this point?	Agree	Section 5.2.1.8 has been modified accordingly
			This obligation goes too far and is technically and economically not feasible.	Disagree	Faults occur in the network and connected units have to withstand them (or otherwise they will break down)
			The imposition to resist to mechanical stress resulting from any fault is too hard.	Disagree	see above
			Units should also cope with electrical stresses.	Agree	Section 5.2.1.8 has been modified accordingly
			The word 'mechanical' should be deleted.	Disagree	Both electrical and mechanical stress caused be fault should be tolerated
147	4	5.2.1.9	To impose "a generation unit remains connected to the grid after a nearby network fault, as far as possible…" is abnormal.	Disagree	It is stated that SOs will define the clearing time of the faults
			Is it appropriate for DSO connected generation?	NA	They also have to stay connected during faults in nearby network
148	4	5.2.1.10	- It should be made clear that management of voltage is the responsibility of the network operator.	Agree	Requirements set in Section 5.2.1.10 reflect this situation

#	Q[stn] #	Respondents' views		ERGEG's position	Explanation
149	4	5.2.2	The issue of interference and dlectromagnetic perturbations / emissions is only mentioned for consumption units (5.3.3) and should be added for generation units. The requirements for voltage control and reactive power management should be standard for generators connected to the grid.	Agree Agree partly	Section 5.2.1.12 has been created accordingly, Small units participation may differ from significant units
150	4	5.2.2.1	Industrial sites with generation capacity should be considered as consumption units: the voltage control and reactive power management of involved generators should not be included in the GGP Provisions related to voltage control and reactive power management at delivery point should depend only from voltage level, not from generation technology	Disagree Disagree	If these industrial sites are connected to the public grid and have an effect on this grid then the requirements should be set also to generators within the site. Both the size of the unit and the generation technology (and the source of energy) may be a transparent criterion
151	4	5.2.2.2	Why shall other forms of control have lower priority than the local voltage control? It has to be clarified in detail how a voltage control in distributed systems should look like. Voltage control for small systems needs to be tackled in a different manner than for large power plants. Why to promote switching between regulation modes instead of two control loops with very different time constants and gains? The operating mode of voltage control should not be prescribed in a regulator guide, but left to the discretion of the system operator. This is not justified for small generators.	N/A Agree partly Disagree Disagree Agree	Voltage control of generators is important to ensure the security of the system This is not exactly the scope of these GGP, however, main principles shall be same in both systems Here it is important to define what is regulated and not how it is done To ensure security of the system, the primary mode shall be defined Section 5.2.2.2 has been modified to adapt requirements to significant units

#	Q[stn] #	Respondents' views		ERGEG's position	Explanation
152	4	5.2.3	Power reserve requirements should be differentiated within different generation technologies. Requirements for frequency control (primary regulation) should be standard for all generators connected to the grid. In case that a generator is not able to provide this service, it must contract it with some other generator able to do it. Active power control (secondary regulation) is a voluntary ancillary service.	Agree Disagree	This is stated in Section 5.2.3.3 Minimum requirement may be set for every generator but in liberalised electricity markets these should be services provided to those needing them and not mandatory requirements
153	4	5.2.4	This chapter is not clear. Is it really needed? TSO may specify house load operation capability. If not specified, it should be optional. House load operation should not be made mandatory as this is not feasible for small distributed systems. It should be defined what "significant" means. House load operation requirement makes incremental costs. It should be provided by significant units as an ancillary service.	Disagree Agree partly Agree Agree Disagree	Section is needed to ensure fast recovery after disturbance Section 5.2.4 has been slightly modified Only significant units are concerned. Section 5.2.2.2 has been slightly modified Glossary has been completed accordingly To ensure fast recovery from disturbances and capability to feed energy to the market is beneficial also to the generator.
154	4	5.2.4.1	"All significant" should be defined.	Agree	Glossary has been completed accordingly
155	4	5.2.4.2	It should be clarified if 5.2.4.2 applies only if 5.2.4.1 applies	Agree	Section 5.2.4.2 has been modified accordingly
156	4	5.2.4.3	It should be clarified if 5.2.4.3 applies only if 5.2.4.1 applies.	Disagree	Section 5.2.4.3 seems to be clear enough
157	4	5.2.5	Island grid operation and black start capability should be developed under contractual basis with significant units.	Agree partly	Section 5.2.5 has been modified, here the significant unit may not be the same as in other sections of the GGP, thus this wording will not be applied
158	4	5.2.5.1	Black start capability is very complex and should not be adopted for generators connected to distribution networks.	Agree	The TSO is responsible for contracting enough black start capacity and thus it is natural that the units are connected to their network directly

#	Q[stn] #	Respondents' views		ERGEG's position	Explanation
159	4	5.2.5.5	Requiring generation units to maintain islands is not acceptable if special provisions are not taken (fault detection, resynchronisation).	Disagree	It is not necessary to be so specific in the GGP
			For industrial grids, where consumption units can be combined with local power production units, GGP should enable disconnection from the public grid as soon as the voltage wave suggests that the public grid might become unable to supply electricity within specified quality criteria.	Agree	Acceptable if requirements set in Section 5.2.5 are met
			Should the requirement be placed on generators who have contracted for island grid operation?	Agree	The GGP include them at a general level, however, grid specific requirements may exist
			The duration of island grid operation should be specified; there could be fuel storage / availability implications.	Agree	Section 5.2.2.2 has been modified accordingly
160	4	5.2.6	Compliance tests should not have to be performed by the generation unit owner. Type testing and validated behaviour simulation models should also be included in the verification process.	Agree	Section 5.2.6.2 has been modified accordingly

#	Q[stn] #	Respondents' views		ERGEG's position	Explanation
161	4	5.2.6.1	The approval of the electrical behaviour should be done during the planning phase to the greatest possible extent.	Agree	Section 5.2.6.2 has been slightly modified
			Type test shall be preferred when possible and suitable.	Agree	Section 5.2.6.2 has been modified accordingly
			Each TSO should determine best how specifications are verified, either by full scale tests, works test, type tests, simulation studies, self certification…	Agree	Section 5.2.6.2 has been modified accordingly
			It to be added that any further tests should be remunerated by the requesting party.	Disagree	Both parties bear their own costs
			What signifies "to the largest possible extent verified by full tests"?	Agree	Section 5.2.6.1 has been slightly modified
			GGP should clarify the requirements on regular reviews.	Agree	Section 5.2.6.2 has been slightly modified
			Many of the requirements would need to be confirmed in situations other than normal operational conditions.	Agree	Section 5.2.6.2 seems to be clear enough
162	4	5.3	System operators should be incentivised to develop the least-cost solution; in competition to generators, industrial consumers should also provide frequency control demand management for the grid.	Agree	GGP addresses this in Section 5.3.4
163	4	5.3.1.1	Consumption units could also contribute to voltage and frequency control. Related equipment should be requested where appropriate.	Agree	Agree for voltage (see Section 5.3.2.3), for frequency demand response should be addressed
164	4	5.3.2	This requirement should be deleted, because a general obligation of compensation of reactive power is not purposeful. TSO and DSO should instead have the possibility to provide a statement of requirements for reactive power and for their steering, like stated in 5.3.2.3.	Disagree	Compensation of reactive power has to be made and it is not beneficial to transmit reactive power long distance. However, Section 5.3.2.1 has been slightly modified

#	Q[stn] #	Respondents' views		ERGEG's position	Explanation
165	4	5.3.2.1	Consumption units shall compensate […] with a power factor close to 1 (0.95 to 0.99).	Disagree	Section 5.3.2.1 provides for the needed framework / requirements.
			The power factor should be close to 1 (0.95 to 0.99).	Disagree	
			The supply or consumption of reactive power for consumption installations should not be introduced: they cannot manage reactive power with the same flexibility as a generator and the implementation cost will be significant.	Agree partly	
			The need for having the consumption units compensating their consumption of reactive power depends on the concrete grid situation.	Agree	
			It will make voltage control at night more difficult, and require large amounts of expenditure. Usually system operators want loads to be at about 0.95. Power factors beyond 0.95 require excessive investments.	Agree partly	
			What is the operative security standard? What is the most cost effective means of achieving it? Compensation is a commercial matter between the TSO and the user.	Agree partly	
			It should apply to 'significant' demand customers or to all customers 'where reasonably practicable'.	Agree partly	
166	4	5.3.2.2	Economical sanction should not be implied, only in case of recurrence.	Agree	Section 5.3.2.2 has been modified accordingly
167	4	5.3.2.3	Is there a real need to involve consumption units in the voltage control?	Agree partly	TSO shall set the rules for this

#	Q[stn] #	Respondents' views		ERGEG's position	Explanation
168	4	5.3.3.1	DSO cannot be responsible for ensuring that a unit does not interfere with another unit. They should only control the interference levels.	Agree	Section 5.3.3.1 has been slightly modified
			There should be limits under which an emitter would not be blamed.	Agree	Section 5.3.3.1 has been slightly modified
			TSO/DSO are not able to manage the situation; the obligation should be with the grid users to make sure that they do not connect any disturbing load.	Disagree	System operators are responsible for the quality of supply, to a certain extent
169	4	5.3.3.2	Limits of authorised emissions should be that of the European standards.	Agree	Section 5.3.3.2 has been slightly modified
			Voltage dips or surges are likely to be the most significant issue.	Agree	Section 5.3.3.1 has been completed
170	4	5.3.3.6	Disconnecting installations responsible for disturbance is hardly applicable, because measurement devices do not make the identification of origin possible, particularly for harmonics.	Disagree	Identification procedures exists
			Disconnection should only be possible when crossing emission limits results in the immediate threat for the safe operation of the grid or other grid users.	Agree	Section 5.3.3.6 has been modified accordingly
171	4	5.3.4.1	Demand response should not be promoted regardless of cost, economy, efficiency or risk.	Disagree	This is voluntary procedure where consumption units can take into account all the issues mentioned
			'As much as possible' could be unrealistically onerous; it should be 'as far as reasonably practicable'.	Agree partly	Section 5.3.4.1 has been modified accordingly
172	4	5.3.5	GGP should distinguish load shedding as contracted ancillary service and as load shedding in emergency plan.	Agree	This is already in the GGP as demand response is contracted service and load shedding is emergency issue
			There should be a clear difference between voluntary load shedding (as an ancillary service) and mandatory load shedding operation (as a last resort option to prevent the system from collapsing).	Agree	

#	Q[stn] #	Respondents' views		ERGEG's position	Explanation
173	4	5.3.5.2	Load shedding should be carried out in accord with the general principles agreed with the regulator unless there are immediate grounds for departure due to operational, safety, or economic criteria.	Agree	Section 5.3.4.1 and 5.3.5.2 have been modified accordingly
174	4	5.3.6	DSO should have the right to do also periodic testing.	Agree	Section 5.3.6.2 has been modified accordingly
175	4	5.3.6.2	Some verification may conflict with the legal duties of TSO/DSO which accompany their unbundled role. It is outside their mandatory scope. Does the requirement only apply to the TSO?	Disagree Agree	SOs have to ensure safe and secure system operation and verification of requirements set to achieve this are within their scope Section 5.3.6.2 has been modified accordingly
176	4	5.4.1.1	There should also be alternatives for metering and information exchange device, established in cooperation with TSO and DSO.	Disagree	There should be metering device between TSO and DSO networks, however, the solution of how this metering is done is not set in GGP
177	4	5.4.2.2	Strict prohibition of reactive power flow between TS and DS networks may result in cost growths for both TSO and DSO. Reducing reactive power flow to zero is not technically feasible. Should DG connected at MV to a HV/MV station have power factor equipment installed to avoid power flow at this point? Reactive power flows should be minimised as far as reasonably practicable	Agree partly Agree Agree Agree	The GGP does not prohibit the reactive power flow Section 5.4.2.2 has been modified accordingly Section 5.4.2.2 has been modified Section 5.4.2.2 has been modified. See also Section 5.2.2 Section 5.4.2.2 has been modified
178	4	5.4.3	GGP should distinguish load shedding as contracted ancillary service and as load shedding in emergency plan. There should be a clear difference between voluntary load shedding (as an ancillary service) and mandatory load shedding operation (as a last resort option to prevent the system from collapsing). DSO should have an obligation to 'make arrangements allowing for automatic / manual load shedding'.	Agree Agree Agree	This is already in the GGP as demand response is contracted service and load shedding is emergency issue; DSO will generally have role in load shedding Section 5.4.3.1 has been modified

#	Q[stn] #	Respondents' views		ERGEG's position	Explanation
179	4	5.4.3.2	DSO may also wish to have an own load shedding scheme.	Disagree	Any load shedding scheme must be well coordinated between the TSO and DSO (load shedding is directly dependent on the frequency, which is a global system quantity)
180	4	5.4.3.3	Load shedding plans have to account for active parts in the distribution networks. Load and generation has to be estimated. The possible change of the generation related to the time of the day and the year has to be considered when distributed generation and renewables are involved (also for 5.4.3.4).	Agree	Section 5.4.3.4 has been modified
181	4	5.4.3.4	GGP is not practical or economic on this point. Load shedding should also be coordinated with developments on the distribution network that will allow distributed generation to support the system.	Agree	Section 5.4.3.4 has been modified
182	4	5.4.4.2	It seems impracticable for a DSO to ensure that all the generators connected to the system are immune to all possible faults on the transmission systems.	Agree	Section 5.4.4.2 has been modified
183	4	5.4.4.3	Should coping with rare events need radical redesign of networks with massive costs and excessively complicated protection schemes? Should be applied to significant TSO connected generators or at least to significant DSO connected generators. It is for the DSO to determine if the generator should support the network.	Disagree Disagree Agree	GGP are established in this particular purpose The system needs the support of the distributed generation, which part becomes significant GGP do not say the contrary
184	4	5.5	Exempted interconnectors should not be called merchant lines, as some existent merchant interconnectors are not exempted (and other future?). A unique section of GGP should deal with the connection of new inter-connectors, whether exempted or not – there should not be specific issues.	Agree Disagree	Section 5.5 has been modified accordingly Exempted interconnectors are not part of the public TSO grid. They need terms and conditions for connection and access. TSO owned regulated interconnectors do not require these rules.
185	5	Least impact since these GGP are quite well in line with the regulation scheme in force in Spain.		N/A	
186	5	Coming regulation scheme in Spain seems to fit with GGP.			

#	Q[stn] #	Respondents' views	ERGEG's position	Explanation
187	5	Positive impact		
188	5	GGP contribute to the security of European power system		
189	5	GGP facilitate the access to the grid		
190	5	A harmonisation strategy will be of particular benefit to: • System operators, especially those who have yet to develop their own grid code requirements; • Manufacturers, who will be required to develop only common hardware and software platforms; • Developers, who will benefit from reduced costs.		
191	5	In case the rules that are developed by TSO are too simply copied and pasted to the DSO domain, suboptimal rules would become obligatory on DSO level and would result in more costs and less effective services for the final consumer and local electricity generator.	Agree partly	The increase in costs has to be compared to the increase of harmonisation and of security of the electrical system. Another respondent think costs may decrease
192	5	DSO await that the implementation of some GGP chapters will result in single cost-raise.		
193	5	Industry businesses will be very affected by GGP, in terms of costs and of technical parameters.		
194	5	A complete and immediate harmonisation of technical requirements could lead to the unnecessary implementation of the most stringent requirements from each Member State. It would not be efficient or economically sound.		
195	5	Existing rules and standards have to be considered. GGP includes tightening with the effect of bigger efforts and costs for DSO.		
196	5	Manufacturers of components will be able to sell similar products in the whole EU. A further decrease of costs can therefore be expected.	N/A	
197	5	The large diversity of requirements and norms results in additional costs for manufacturers and project developers. Under such a framework, economies of scale are limited. A harmonisation of grid connection requirements is key to accelerate the path towards an increased competitiveness of the PV sector.	Agree	Competition, harmonisation, non-discrimination and transparency are drivers for making guidelines for grid connection and access
198	5	Through the harmonisation of technical requirements, connection procedures and access charges and charging methodology, existing barriers to competition can be removed.		

#	Q[stn] #	Respondents' views	ERGEG's position	Explanation
199	5	GGP and harmonisation are an important step towards ensuring the efficient operation of increasingly interconnected networks and are a key component in helping to develop effective competition in the internal electricity market.		
200	5	GGP may encourage investment and avoid regulatory risk (technical requirements impossible to reach) and delay risk (bureaucratic reasons).	Agree	Competition, harmonisation, non-discrimination and transparency are drivers for making guidelines for grid connection and access
201	5	It will help to reduce uncertainty for generation investments.		
202	5	What is the legal status of the ENTSO draft network codes before adoption by the Commission? What happens if it overlaps a national code? What happens if grid users' interests are being harmed?	N/A	Not scope of these GGP
203	6	All measures taken should ensure objectiveness, transparency and non-discrimination.	Agree partly	GGP addresses technical requirements
204	6	Renewable and conventional generators should have same conditions for connection and access.		
205	6	No priority access issues should be addressed in the GGP, since it is not mandated in the 3rd Package.		
206	6	Network costs should be transparent and fairly distributed and computed for all generation technologies.		
207	6	All contractual arrangements such as grid codes, connection agreements and similar should be transparent and in no way discriminatory between different generating technologies.		
208	6	Sufficient quality of electricity is indispensible, therefore harmonisation of grid access and connection procedures is to be welcomed, especially in view of the growing capacity for discontinuous production.		
209	6	The wind energy technology has shown that it can do what is technically required to maintain system stability and follows thereby most provisions for voltage and frequency quality outlined in the GGP.	Agree partly	Other provisions than these GGP will have to fulfil the provisions included in Directive 2009/28/EC (art. 16, §2.)
210	6	Priority access for renewables influences grid operation as well as rights of old generation units. It can not be considered without a form of congestion management.		
211	6	In order to manage a diversified energy portfolio, grid access procedures must accommodate the diverse energy supply envisioned.	Agree partly	Other provisions than these GGP will have to fulfil the provisions included in Directive 2009/28/EC

#	Qstn #	Respondents' views	ERGEG's position	Explanation
212	6	All processes, timelines and rule settings must be as much as possible extended to renewables. Exemptions might be only reasonable if technically justified.		(art. 16, §2.)
213	6	Directive 2001/77/EC requires facilitating access to the grid system of electricity produced from renewable energy sources. This is in line with the new Renewable energy directive.		
214	6	Regulators should encourage investments by facilitating authorisation procedures and allocating appropriate remuneration to DSO who invest to improve their networks for the welcome of renewable generation, especially in rural areas.		
215	6	Offshore wind power generators would be facilitated if the grid access be agreed under condition of firm order of only one essential component and only the presentation of a feasible financing concept.		
216	6	The provision for priority access to the grid is an absolutely vital aspect of the EU legislation on the promotion and use of renewable energies. Given the absence of properly functioning electricity markets in the EU, it is necessary to strongly support priority access, also during dispatch		
217	6	Priority access is a crucial element to foster the deployment of renewable energy sources and must therefore be highlighted in these guidelines		
218	6	The main aspect is the modernisation of the grids. EU should boost R&D disagree on smart grids, steering and storage technologies.	Disagree	These issues are outside of the scope of these GGP
219	6	EU should boost and implement accordant projects in R&D and create incentives for the necessary investments in the modernisation of the grids in relation to new forms of energy generation and energy use. A too much in regulation may endanger investments in grids and therefore in security of supply.		
220	6	For the economic and ecologic use of the resources, it is necessary to support the network expansion wider than the European frontiers.		
221	6	The society benefits from priority access given to renewables, but in case of risk for the network security.	Agree partly	Other provisions than these GGP will have to fulfil the provisions included in Directive 2009/28/EC (art. 16, §2.)
222	6	Growing amount of preferential connection applications for renewables can lead to the pressure on real grid capacity.		
223	6	Mandatory priority of access for renewables could jeopardise security of supply and will hamper EU market.		

#	Q[stn] #	Respondents' views	ERGEG's position	Explanation
224	6	GGP should guarantee maximum distributed generation without putting in danger the system operation.		
225	6	Priority access to renewables is a political rather than technical issue; it should not be included in GGP. The addition of more intermittent generation coupled with the retirement of base load generation units will pose greater challenges for balancing the grids in the future.		
226	6	Specifications may impose to renewables either their connection in an area with large consumption or their building back-up power plants.		
227	6	The specific electricity consumption needs of the railways should be considered.	Agree partly	Whereas railways can in principle be considered as perturbing systems, as distribution system or as low-rate users, due to their control-area-wide topology and the fact that railways are the only grid user who have their own electricity grids (often operated with a different frequency) some specific considerations would be required in the related codes within the context of the grid connection framework guidelines.