



PEGASE

PAN EUROPEAN GRID ADVANCED SIMULATION AND STATE ESTIMATION

D6.1: Data availability and related legal issues for the ETN simulation applications

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Executive summary

The purpose of the present document is to identify legal obstacles that may hinder data exchanges between TSOs willing to do so for operational security purposes, and thus the deployment of simulation tools prototyped in PEGASE.

The time scope considered here extends from operational planning (a few days before operations) to real-time. Thus relevant data include network equipments and generation plants technical description, as well as their real time and anticipated status and states (generation schedules in particular) and real time and anticipated aggregated loads at EHV buses.

Those data may be the property of involved TSOs, but also of external actors: external TSOs, DSOs, producers, industrial customers, equipment operators. They are to be used exclusively by TSOs themselves, or third parties contracted by TSOs and bound by a non disclosure agreement.

Aforementioned actors may be reluctant to disclose some of the required data, or may be prevented to do so by law. Special attention must be given to the following areas of law:

- Confidentiality: generation schedules or technological details can be considered as commercially sensitive information.
- Security: network and equipments descriptions may reveal critical infrastructure weaknesses, threatening national security
- Competition: data should not be used or disclosed in a manner that would hinder fair competition

EU directives require TSOs to ensure confidentiality of commercially sensitive information obtained in the course of carrying out their activity.

The most solid basis currently provided by EU law for the promotion of data exchanges between TSOs remains the following directive statement: system operators should exchange sufficient information in order to ensure the secure and efficient operation of the interconnected system, which concur with PEGASE goals.

National laws would however have to be examined in details for each involved TSO. For instance, the 2008 survey by ENTSOE on transparency for market-related data showed that some of them could not be made public due to legal barriers in national laws (Switzerland in particular). Those laws can be variously restrictive, accurate, and compliant to EU directives. For instance:

- In France, law defines an explicit list of commercially sensitive data not to be disclosed (among which scheduled and real-time generation), except for exchanges with DSOs or foreign TSOs, if they appear necessary to the proper execution of their mission.
- In Belgium, confidential or commercially sensitive data disclosure is prohibited, except to other TSOs, under a contract and/or rules enforcing that the recipient ensures the same level of confidentiality as the national TSO.
- In Switzerland, third party data cannot be handed out, without the explicit consent of that third party (for instance generation companies, in our case).
- ...

In recent years, several coordination initiatives based on the exchange of DACF and snapshot files (CORESO, SSC, TSC) have demonstrated that the exchange of confidential data between TSOs for purposes of operational security and efficiency is possible, with an appropriate setup of confidentiality obligations.

Upcoming European Network Codes should clarify and standardize the rules around data exchanges between European TSOs.

As for more short-term oriented considerations, PEGASE consortium was granted by the UCTE the authorization to use and diffuse a “study model” of the ETN designed for the interoperability tests of CIM format, therefore enabling PEGASE member to use it as a basis to build their test cases.

1. Introduction

The aim of the PEGASE project is to provide new methods and tools that can reliably assess the security of the Pan-European transmission network. In order to demonstrate the feasibility of such an approach we need to assess its technical feasibility but also the legal issues that may prevent the deployment of the developed tools at the European level.

In this document we are focusing on the data exchange issues, the legal barriers to be examined cover both those under public law as well as private law.

In the area of public law, state regulation may prevent the relevant stakeholders, such as the transmission system operators (TSOs), from disclosing information about the transmission network. Alternatively, state regulation may mandate that stakeholders have to disclose certain information on the basis that such disclosure will enhance consumer welfare through market competition.

In the area of private law, stakeholders may claim proprietary rights such as confidential information and intellectual property rights over the same data. Competition law may also prevent stakeholders from disclosing market information since most stakeholders holds a monopoly or quasi monopoly position in the relevant market.

Both national and EU laws may be relevant. In particular, EU directive regulating the electricity market has to be examined.

The last part of the document is dedicated to legal barriers encountered in the course of PEGASE project, and how they were dealt with.

2. Description of the data

2.1. Use of data

The scope of use of the tools developed within PEGASE is real-time operation and operational planning; long term planning is then out of the scope of PEGASE.

The data required are for a technical use with the aim of improving the system security: state estimation, steady state optimisation and dynamical simulation. But from these computations decisions may be made that impact the market (generator shut down, start-up, limitation or must run, ATC limitation etc...).

We are considering here only data exchanges between TSOs for the sole use of TSOs or third parties contracted by TSOs and bound by a non disclosure agreement.

2.2. Nature of data

The data of interest for the tools developed in PEGASE may be of different types :

- Technical characteristics (impedances, losses, voltage ratios, current, active or reactive power ratings; process models and parameters, controllers, automatons or protections logic and settings...)
- Real time status and states (power flow on a line, controller mode, breaker status)
- Anticipated Status and states (same as real-time)
- Economic (generating costs for start-up, output increase/decrease etc...)

Usually the economic and anticipated state data have a commercial value and are more sensitive than the real time state and technical characteristics.

But some technical characteristics may be sensitive because they reveal a technology know how (HVDC VSC or gas turbine detailed model for instance) or the ability of the transmission system to transport electric power from one location to another (flow limits).

Real time or past state data may reveal the strategy or practices of market participants or the state of the market (generating unit status or output).

2.3. Property of data

The data at the disposal of TSOs to carry out their missions and run the applications mentioned above can be the property of different entities:

- the TSO itself : the characteristics, operation strategy and state of substations, lines, transformers, grid controllers, grid automata, grid protections, FACTS and DC links;
- other TSOs;
- Other infrastructure operators: DC links or Off-shore grid Operators for instance;
- Distribution System Operators: some high voltage levels infrastructures which are the property of DSOs, load and embedded generation characteristics and state;
- Power producers (models and parameters, operation strategy and state of energy conversion process, electrical machine, step-up transformer, auxiliaries, controllers, automatons, protections, DC links, as well as unit costs).

The stakeholders in the regulated framework (TSOs, DSOs) may be more prone to share data than the power producers first because they may see a direct interest in receiving data, second because they are not in competition with the entities they are sharing data with.

Nevertheless TSOs or DSOs may be reluctant to provide information on the grid weakness or strength in order to protect their infrastructures against ill-intentioned actions or terrorist attacks.

The notion of property is crucial in practice for the TSO which wishes to transmit data it does not own for it may have to take special legal provisions to be able to do so and justify the use of the data to the owner.

2.4. Existing modalities for data sharing

Models of generating plants are usually provided by the generators to their TSO as a condition of connection to the network.

Anticipated and real-time values are collected by the TSO. However, generators, DSOs and electricity retailers provide the data pertaining to their equipments or customers.

Most of the data considered in PEGASE are already shared by European TSOs under bilateral or multi-lateral agreements concluded under the auspices of organisations such as ENTSO-E.

2.5. List of data

The data that TSOs would need to exchange to run the tools developed in the PEGASE project include the following:

- (a) Models of the transmission lines, transformers and other devices used to transport electric power,
- (b) Static and dynamic models of the generating plant including step-up transformers, machine controllers, automatons and protections.
- (c) Anticipated and real-time values of the aggregated loads at all nodes in the network,
- (d) Anticipated and real-time status of the switching devices,
- (e) Anticipated and real-time status of the generating units,

- (f) Anticipated and real-time values of the active power produced by these generating units,
- (g) Anticipated and real-time status of the control devices used in the system (e.g. generator automatic voltage regulators, tap-changing transformers, phase-shifting transformers, shunt capacitors, shunt reactors),
- (h) Anticipated and real-time values of the set-points of these control devices,
- (i) Anticipated and real-time status of DC lines, and
- (j) Anticipated and real-time values of the power injected or extracted by these dc lines.

3. Legal context

3.1. General Principles

In general, prohibitions and restrictions on information disclosure and exchange in European countries may come under various areas of the law.

Data protection. Data protection law is not applicable to this project since no personal data is involved. Article 2 of the Directive 95/46/EC of the European Parliament and of the Council of 24 October 1995 on the Protection of Individuals with Regard to the Processing of Personal Data and on the Free Movement of Such Data defines ‘personal data’ to mean “mean any information relating to an identified or identifiable natural person (‘data subject’); an identifiable person is one who can be identified, directly or indirectly, in particular by reference to an identification number or to one or more factors specific to his physical, physiological, mental, economic, cultural or social identity”. Since the data required by the project are technical data and not marketing or personal data, issues regarding data protection do not arise.

Confidentiality. Article 39 of the Trade-Related Aspects of Intellectual Property Rights Agreement (TRIPS) in the WTO Treaty requires member states to protect undisclosed information. This protection is available to both natural and legal persons, and covers information as long as it (i) is secret in the sense that it is not, as a body or in the precise configuration and assembly of its components, generally known among or readily accessible to persons within the circles that normally deal with the kind of information in question, (ii) has commercial value because it is secret, and (iii) has been subject to reasonable steps under the circumstances, by the person lawfully in control of the information, to keep it secret.

In general, all countries have a law of confidentiality in one form or another. TSOs may claim that the information they hold is confidential and therefore not subject to public disclosure, and this could be the primary reason why TSOs are reluctant in sharing information.

Database rights. The European Directive 96/9/EC of 11 March 1996 on the Legal Protection of Databases creates a new sui generis property right in collections of information known as database right. TSOs may claim a database right in the information that they generate in the process of their operation. An owner of a database right has the right to prevent the unauthorised extraction or re-utilisation of his data.

In *British Horseracing Board v. William Hill*, the European Court of Justice narrowed the scope of what is being protected by interpreting that substantial investment has to be shown to be invested in the “obtaining, verification and presentation” of the database content, and not to the creation of the content itself. Thus data which arise incidentally of other commercial activity, under the interpretation of British Horseracing Board, might not be so protected under database right. Nevertheless, database owners might still raise database right as a justification for non-disclosure.

Security. National laws may prevent TSOs from disclosing to the public or other parties information regarding their infrastructure under the belief that such disclosure may pose a risk of terrorist attack on critical infrastructure.

Competition. European competition law under Article 81 of the Treaty Establishing the European Community prevents undertakings from participating in concerted practices which may effect trade between Member States and which have as their object or effect the prevention, restriction or distortion of competition within the common market. In this project, there might be a risk that information sharing between TSOs in horizontal relationship might have the effect of contravening prohibitions of Article 81.

3.2. European Union

Directive 2009/72/EC of the European Parliament and of the Council of July 13 2009 is currently the operative directive establishing the common rules for the internal market in electricity in the European Union.

Article 16 maintains the confidentiality for transmission system operators: without prejudice to Article 30 [on access to accounts by regulatory authorities] or any other legal duty to disclose information, the transmission system operator shall preserve the confidentiality of commercially sensitive information obtained in the course of carrying out its business. Information disclosed regarding its own activities, which may be commercially advantageous, shall be made available in a non-discriminatory manner.

3.3. Country specific laws

3.3.1. United Kingdom

Supply of electricity in the United Kingdom is chiefly governed by the Electricity Act 1989. There are a few provisions in the Electricity Act which govern information collection and disclosure, although none appears to be written with real time information exchange in mind in the manner as required by the project.

Section 30(3)(b)(i) allows the Secretary of State to require, by regulations, “persons authorised by a licence or exemption to generate, transmit or supply electricity ... to furnish electrical inspectors with records or other information ...”.

Section 42(1)(b) requires the Director General of Electricity Supply to “from time to time collection information with respect to ... the levels of overall performance achieved by [public electricity] suppliers in connection with the provision of electricity supply services ...”

Section 42(2) requires each public electricity supplier to furnish to the Director General annually information with respect to the level of performance achieved by the supplier as may be so specified.” Failure to provide such information is punishable with a fine.

Section 47(1)(b) states that it is one of the duties of the Director General “to collect information with respect to those activities [connected with the generation, transmission and supply of electricity, including in particular activities connected with the supply to any premises of heat produced in association with electricity and steam produced from and air and water heated by such heat], and the persons by whom they are carried on, with a view to facilitating the exercise of his functions.”

Section 42(4) requires the Director General to publish at least once a year “information collected by or furnished to him ... as it may appear to him expedient to give to customers or potential customers of public electricity suppliers.” Similarly, section 48(1) allows the Director General to publish “such information and advice as it may appear to him expedient to give to customers or potential customers of persons authorised by a licence to supply electricity.”

Furthermore, the Director General may under section 48(1) “arrange for the publication, in such form and in such manner as he considers appropriate, of such information and advice as it may appear to him expedient to give to customers or potential customers ...”.

There are some restrictions on the disclosure of information. Section 57(1) prevents the disclosure of “information with respect to any particular business which (a) has been obtained under or by virtue of any of the provisions ... and (b) relates to the affairs of any individual or to any particular business ... during the lifetime of that individual or so long as that business continues to be carried on ... without the consent of that individual or the person for the time

being carrying on that business.” This provision appears to be similar to data protection protection for individuals and trade secret protection for businesses.

Various exceptions to the restriction in section 57(1) exist. The most relevant one to the project is section 57(2)(h) when the “disclosure of information ... is made ... in pursuance of a Community obligation.” This paragraph can be read as allowing disclosure of information under the direction of an EU Directive.

Apart from the powers of the Director General, the Secretary of State may, under section 98(1), “if he considers it expedient for the purpose of obtaining statistical information relation to the generation, transmission or supply of electricity, serve a notice ... on any licence holder or any person who is authorised by an exemption to generate or supply electricity.” As in section 57(1), such information relating to the affairs of any individual or to any particular business may not be disclosed without the consent of the individual or the person for the time being carrying on that business.

An exception to the restriction on disclosure in section 98 exists under subsection (4) when the disclosure “is made after consultation with the individual concerned, or the person for the time being carrying on the business concerned, and is of information relating to (a) the quantities of electricity generated by particular methods or by the use of particular fuels; (b) the quantities of particular fuels used for the generation of electricity; (c) the quantities of electricity transferred between Great Britain and countries or territories outside Great Britain, or between England and Wales on the other hand and Scotland on the other; or (d) the quantities of electricity supplied in England, Scotland or Wales either generally or to persons of any particular class or description.”

The power to collection information is also available to the Secretary of State under the Energy Act 1976. Under paragraph 1(1) of Schedule 2, “the Secretary of State may direct any person carrying on an undertaking (a) to keep such books, accounts and records relating to a substance mentioned in section 1(1) of this Act [namely, inter alia, the production, supply, acquisition or use of electricity], or to electricity, as may be specified; (b) to furnish, as and when specified, estimates, forecasts, returns and information relating to such a substance, or to electricity; (c) to furnish, as and when specified, information and forecasts relating to the undertaking itself or its activities, including the way in which the undertaking is organised and administered and the character and extent of its operations.”

Generation, transmission, interconnection, distribution, and supply are governed by standard licence conditions, in addition to other licence conditions as may be imposed, under the Electricity Act 1989.

Condition 13(1) of the Standard Licence Conditions for Generation requires “the licensee [to] furnish to the [Gas and Electricity Markets] Authority, in such manner and at such times as the Authority may reasonably require, such information and shall procure and furnish to it such reports, as the Authority may reasonably require or as may be necessary for the purpose of performing: (a) the functions conferred on it by or under the Act; and (b) any functions transferred to or conferred on it by under the Utilities Act 2000.”

The same conditions applies under Condition B4(1) for transmission licence and Condition 4(1) for interconnector licence.

Condition 6.1 of the Standard Licence Conditions for Distribution has a similar requirement, that “after receiving a request from the Authority for Information that it may reasonably require or that it considers may be necessary to enable it to perform any functions given or transferred to it by or under any legislation, the licensee must give that Information to the Authority when and in the form requested.” A similarly worded provision appears for supply licence under Condition 5.1.

There does not appear to be any legal prohibition against transmission operators from exchanging technical information. Commercial and competitive factors may on the other hand influence the decision of an operator in whether to exchange data with other.

The electricity transmission grid is currently run by a single company, National Grid plc.

In the United Kingdom, the electricity market is under the purview of the Office of the Gas and Electricity Markets (Ofgem). Presently, the distribution of electricity is operated by 14 licensed distribution network operators (DNOs) where each is responsible for a distribution services area,

in addition to four independent network operators who owns and run smaller networks within the DNO networks.

3.3.2. France

Generally, Article 16 of the law no. 2000-108 of February 11, 2000 requires the operators of public transmission grid to preserve the confidentiality of economic, commercial, industrial, financial and technical information, the communication of which would be likely to infringe the rules of free and fair competition and of non-discrimination imposed by law.

The Decree no. 2001-630 of 16 July 2001 gives the list of information that has to be kept confidential:

- (i) The provisions of contracts and protocols for access to public transmission or distribution grids referred to in Article 23 of the Law of February 10, 2000 referred to above as well as the information exchanged for their preparation and their application, relative to the identity of the parties of a supply contract, the transaction price of electricity, the financial data concerning the transaction balancing, the characteristics of generation, supply or consumption, the duration of contracts and access or supply protocols, the technical and financial conditions in grid connection, the contractual penalties and sanctions;
- (ii) The generation, supply and consumption schedules, mentioned in section I of article 15 of the Law of February 10, 2000 referred to above, the proposed adjustment of the schedules mentioned in section II of Article 15 of that law, the amendments made by the operator of public transmission grid in these generation schedules under II and III of Article 15 of this same law, as well as any piece of information exchanged between the concerned grid operators and the users of these networks in order to establish and implement of these schedules;
- (iii) The provisions of the contracts and protocols of purchase of electricity signed by the public transmission grid operator mentioned in section III of Article 15 of the Law of February 10, 2000 referred to above as well as the information exchanged for their preparation and their application, relative to the transaction of electricity price, financial data on the balancing of transactions, the characteristics of generation, supply or consumption, the duration of contracts and access or supply protocols, the contractual penalties and sanctions;
- (iv) The information from the measurements mentioned in section IV of Article 15 and section III of article 19 of the Law of February 10 2000 referred to above or coming from any other physical measurements made by system operators concerned on the connecting equipments and the installations of a user of such networks;
- (v) The levels of the differences recorded with respect to the generation supply and consumption schedules, as well as the amounts of financial compensations requested or granted by the public transmission system operator to concerned users, mentioned in section IV of Article 15 of the Law of February 10 2000 referred to above;
- (vi) The information under paragraphs 1 to 5 transmitted by other public transmission or distribution system operators or by foreign system operators, in order to accomplish their missions.

An exception to the above prohibition exists under Article 4 of the 2001-630 decree: The public transmission system operators and the public distribution system operators are allowed to exchange between them, as well as with the departments of foreign system operators, any piece of information referred to in Article 1, when the disclosure is necessary for the proper execution of their respective missions.

Therefore, it is likely that there is no observable legal barrier in France for operators to exchange information as long as it is necessary for the proper execution of their respective missions.

3.3.3. Belgium

Apart from general principles of law governing trade secrets, intellectual property, competition and data protection, specific Belgian laws exist which restrict the exchange of data between TSOs.

Article 14 of the Law of 29 June 1999 on the organisation of the electricity market and article 458 of the Penal Code state that the employees of the TSOs are subject to professional secrecy and cannot reveal information of which they are informed during their functions except the communication of this information to the TSOs that is expressly envisaged by the law or its execution decrees. Similar regional laws in Belgium exist.

Article 23bis of the Law of 29 June 1999 on the organisation of the electricity market prohibits firms providing electricity from performing any unfair commercial practices (either individually or jointly) having an effect or likely to have an effect on the Belgian market of electricity. An interpretation of this includes sharing data which might have an effect on the Belgian electricity market.

Article 13 of the Royal Decree of 3 May 1999 relating to the operation of the national transport network of electricity requires TSOs to take measures limiting the access to commercial data related to users of the grid. Moreover, the processing of these data can only be undertaken by the members of the steering committee of the TSO and its employees. Similar regional laws in Belgium exist.

Article 11, 3° of the Royal Decree of 19 December 2002 establishing a technical regulation for the operation of the national transmission system operator and the access to this on mandates that the communication of the confidential or commercially sensitive information to third parties is not allowed except if this communication is made to foreign TSOs in the framework of a contract and/or rules and on condition that the recipient commits to give to this information the same degree of confidentiality as the one that is given by the national TSO.

Article I.2.3.1. of the Ministerial Decree of 4 April 2007 relating to the adoption of a technical regulation for the distribution of electricity in Flemish Region prohibits the communication of confidential and sensitive commercial information except if:

- i. the communication is authorised by the law or regulations on the organisation of the market of electricity;
- ii. the disclosing party expressly gave its written agreement for the communication;
- iii. the information is usually accessible to the public;
- iv. the Distribution System Operators (DSO) or communication with other system operators (TSOs and DSOs) require the communication of this information .

Separate laws exist that prevent DSOs from communicating personal and commercial information to other firms.

3.3.4. Croatia

General rules about confidentiality which apply on Croatia are partially or completely in compliance with article 12 Directive 2003/54 of the European Parliament and Council of 26 June 2003.

However, as far as Croatian energy laws and bylaws are concerned, there are no specific rules that regulate issues of confidentiality and data exchange.

3.3.5. Switzerland

Article 25(1) of the Swiss Electricity Supply Act states that the companies being active in the Swiss may be requested by competent authorities to hand over relevant data. However, a study like PEGASE is not a competent authority and as such has no power to request data from transmission companies under Swiss law.

4. Transparency and Coordination initiatives

4.1. ETSO Legal Survey on Transparency

The European Transmission System Operators commissioned a legal survey of market-related information among European TSOs. An executive summary of the survey was published in October 2008.

The purpose of the survey was to form an overview of the individual countries' compliance to the requirements of the Congestion Management Guidelines as annexed to the EC Regulation 1228/2003, and the Guidelines for Good Practice in Information Management and Transparency in Electricity Markets by the European Regulators' Group for Electricity and Gas (ERGEG).

The scope of the survey was information related to congestion management and electricity markets which does not cover all the information required by the PEGASE applications but treats a part of them, notable the generating units schedules (over 100 MW) and the line ratings.

According to the survey, some information is already available to the public, while others are still in various stages of disclosure. Also, some information remains prohibited from disclosure by law.

4.2. European Union

Directive 2009/72/EC of the European Parliament and of the Council of July 13 2009 mentioned above includes an article (Article 12 (e)) indicating that "each transmission system operator shall be responsible for providing to the operator of any other system with which its system is interconnected sufficient information to ensure the secure and efficient operation, coordinated development and interoperability of the interconnected system."

4.3. DACF exchanges

Former UCTE TSOs exchange Day-Ahead Forecast data for congestion monitoring (Policy 4-C). The data are "best effort" forecast. The "code of conduct and generic rules to handle the data" are fixed by the Policy 7 for the former UCTE.

Several coordination initiatives based on DACF files have been launched in recent years : SSC, TSC, Coreso. These initiatives have different forms including:

- A framework for the cooperation between TSOs without creating a new entity,
- A coordination centre centralizing data put at the disposal of TSO members
- A coordination centre performing studies for TSO members

5. Conclusion on data exchanges between TSOs for security oriented applications

In practice a few TSO coordination initiatives have demonstrated that confidential data exchanges between system operators are possible when there is a clear will of the participants motivated by a common goal and mutual advantages (Coreso, TSC, SSC). Thus, the purpose of PEGASE tools, namely an improved European security of supply, should constitute a sufficient motive to find solutions.

Though, currently no clear rule compels TSOs to disclose data, except for transparency principles for market-related information and for the need of supervision and control from regulating bodies, European or national administrations. Rules concerning the exchange of data between system operators for operational security should be extended in the upcoming European Network Codes.

Moreover, TSOs may put forward a series of principles and laws that may be interpreted in a sense of restriction or even prohibition of data exchange, some of those principles being enacted by the European Commission.

6. Legal barriers encountered during the course of PEGASE

6.1. European Transmission Network test model

PEGASE objectives include testing the developed tools on a set of data representative of the structure and of the behaviour of the European interconnected system. However, obtaining network data from all, or at least most, European TSOs can be a legal challenge and a tedious task, as demonstrated above, and even more if it is to be used by non-TSO organizations. The present paragraph describes how that difficulty was overcome for PEGASE study.

The base model for UCTE network used to build PEGASE test cases was obtained from UCTE by RTE. It is the 9200 nodes model designed by UCTE to perform interoperability tests for the CIM format. RTE has been granted the authorization to use it or transfer it to any entity with no restriction as from June 1st 2009 (see letter from UCTE Secretary General in annex), thus making it available for all PEGASE members.

The model answers PEGASE needs for it is representative of the real ETN in its structure and behaviour. However it contains no confidential data from TSOs and parameters of the model were slightly changed and are thus fictitious.

The use of that test model allowed PEGASE consortium to avoid complicated legal procedures with each European TSO, in particular those not involved in the consortium. Moreover, non-TSO members thus also have free access to that test model.

For more details on the use of that model to build PEGASE test cases, please refer to PEGASE D6.3.

6.2. Validation of wind turbine and HVDC VSC models for Eurostag

In the frame of WP5, PEGASE activities include the construction and validation of various equipments models for dynamic simulation, to be used in Eurostag software. In particular, models for wind turbines and HVDC VSCs were needed, and provided by ESP.

UDE were in charge of the validation of those models. UDE ensures that the validation process has been carried out properly, and that results are satisfactory, by comparison against other detailed models and measurements.

However, due to a confidentiality issue, UDE are not able to describe in details the methodology used for validation. Confidentiality thus prevents UDE to demonstrate the validity of the process to the PEGASE consortium.



7. Annex 1: Authorization to use and diffuse UCTE study model



union for the co-ordination of transmission of electricity



2009-06-02

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Subject: UCTE test model – 9200 nodes

Dear Mr. Sermanson,

UCTE explicitly recognises that RTE has the right to use the "9200 nodes model" - designed by UCTE for the CIM for UCTE interoperability test, which has been held on 23-27 March 2009, for its own purposes and also to diffuse it and transfer the right to use it to any entity with no restriction as from June 1st 2009.

UCTE does hereby waive its right to sue or to bring any action against RTE for having used, diffused or transferred the right to use the "9200 nodes model".

All rights and obligations of UCTE expressed in this letter shall automatically be transferred to "European Network Transmission System Operators for Electricity (ENTSO-E)", an international non-profit association under Belgian law, with registered office in Brussels, Boulevard Saint-Michel 15, created on December 19th 2008, as soon UCTE will transfer its activities to ENTSO-E and will no longer exist.

Please pay attention that the model can be used for testing of new calculation algorithms or other research activities, but cannot be involved in any load flow or other studies related to UCTE system because the representation of the system is fictitious: all parameters in the model are changed and no confidential TSOs data is included in the model. Therefore, no conclusions on the system behavior can be made.

Yours sincerely,

Marcel Bial
UCTE Secretary General

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