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WHITE PAPER:
TRANSMISSION DISPATCH ORGANIZATION IN
POWER MARKETS: THE UK EXAMPLE

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Introduction:

The Power Network Business (PNB) plays a key role within the National Grid Company by providing a fully integrated power transmission service. In essence, PNB 'owns' the transmission assets in England and Wales – that is the transformers, switchgear, lines, cables etc – that enable the National Grid Company to transmit high voltage electricity. PBN also manages the operation of the transmission system through Grid System Management.

Goals:

The primary goals of PNB are:

- to provide ever-improving value and service to all its customers through the provision of a cost-effective, high quality energy transmission system;
- to meet NGC's statutory and transmission license obligations;
- to take due regard of the environment in all its activities;
- to contribute to NGC's fulfillment of shareholders' expectations;
- to contribute to NGC's long term business and profitability.

The National Grid Company plc was set up by an Act of Parliament in 1989 and its key responsibilities under the Act are as follows: (1) to maintain an efficient, coordinated and economical electricity transmission system; (2) not to discriminate between users or classes of users; (3) to facilitate competition in the generation and supply of electricity. The Electricity Act 1989, Transmission License and Grid Code are the key documents which govern the operation of the company. The Transmission License places numerous obligations on National Grid in respect of its development and operation of the transmission system. These obligations include:

- having in force and complying with the Balancing and Settlement Code;
- having in force and complying with the Connection and Use of System Code;
- preparation of and compliance with Grid Code;
- publication of the Charging Statement;
- preparation and publication of the Seven Year Statement;
- requirement to offer terms for Connection to and Use of the System;

¹ DISCLAIMER

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- requirements in respect of inter-connectors;
- requirement to comply with defined security standards for planning and operation of the transmission system.

The National Grid Company² plc in its capacity as both Grid Operator and Ancillary Services Provider, together with its two subsidiaries, namely Energy Settlements and Information Services Ltd – that performs the functions of the Settlement System Administrator (Part XXI of PSA, Energy Settlements and Information Services Limited is appointed Settlement System Administrator that is wholly-controlled by NGC); and Energy Pool Funds Administrator Limited – that performs the functions of the Pool Funds Administrator are parties to the Pooling and Settlement Agreement.

Organizational Structure Of The National Grid Company Plc

I. Grid System Management (Gsm)

The role of the GSM is to coordinate the scheduling and dispatch of power stations across England and Wales to ensure that the country's energy needs are met. In doing this it has to conform with general and specific commercial, technical and safety legislation and industry agreement. Of particular importance are the Transmission License, the Pooling and Settlement Agreement and the Grid Code. In management of the transmission system, the normal and accepted commercial practices are applied, so that decisions are influenced by commercial as well as technological considerations. Therefore, it is important that the security, safety and reliability of the transmission system is achieved at a price which is acceptable to all users of the grid.

Organization

There are about 600 GSM staff throughout England and Wales in different operational groups and support functions:

National Control and the four Area Control Centers are responsible for the control and operation of the transmission system and management of safety from the system. National Control is also responsible for monitoring the transmission system's performance.

Operational Planning is responsible for all aspects of outage planning, the Power System Development interface and specifying transmission system requirements for ancillary services.

System Control Development is responsible for supporting and developing information systems, the energy management system and system control equipment.

Pool Interface acts as the focal point within GSM for all dealings with the Pool and OFGEM³ and on all Grid Code issues.

Business Operations is responsible for all commercial aspects of GSM's activities, including consultancy work both in the UK and overseas, and for the NGC Corporate Communications Network.

Main functions:

- Planning, controlling and operating the system in a safe and secure manner.
- Management of the bidding process.
- Scheduling and dispatching plant in merit order.
- Provision of data to the Settlements System.

² According to Part XXI (The Participation of NGC) of PSA, for so long as NGC is the Grid Operator, references in PSA to the Grid Operator are read and construed as references to NGC. And for so long as NGC is the Ancillary Services Provider, references in PSA to the Ancillary Services Provider are read and construed as references to NGC.

³ Ofgem is the Office of Gas and Electricity Markets, regulating gas and electricity industries in Great Britain. Ofgem operates under the direction and governance of the Gas and Electricity Markets Authority, which sets all major decisions and policy priorities. Ofgem is governed by an Authority and its powers are provided for under the Gas Act 1986, the Electricity Act 1989 and, most recently, the Utilities Act 2000. Ofgem also has powers under the Competition Act 1998.

- Grid Code management.
- Safety from the system.
- System Control Development.
- Pool Executive support.

II. TRANSMISSION ASSET MANAGEMENT

Transmission Asset Management (TAM) is responsible for the Company's transmission assets which encompass the two primary components of financial and technical management. Together, these ensure the life cycle costs, productivity and performance of existing and future operational assets consistent with satisfying NGC's customers' needs. Amenity and environmental issues are also at the forefront of TAM's accountabilities.

Organization

Transmission Asset Management is organized as follows:

- Transmission Asset Management North and South undertake all aspects of asset management, business planning, financial management and contractual relationships with NGS's service organizations and suppliers.
- Engineering undertakes all aspects of technical and performance developments.
- Business Management is responsible for business systems, procedures and contract development and the coordination of the plans for TAM's assets.
- Planning and Amenity Affairs Group is a multi-discipline team which has been established to unify policy on the issues facing the Company in a key area of business challenge: the acquisition and retention of consents, planning permissions and wayleaves for transmission lines and substations and provides the company focus in issues relating to electric and magnetic fields.

Main functions:

- Long term asset profitability and productivity.
- Transmission Capital Investment Plan.
- Transmission Asset Register.
- Managing contracts for asset care, site management and project management services.
- Availability and reliability performance of assets.
- Asset management planning.

III. POWER SYSTEM DEVELOPMENT

Power System Development (PSD) is primarily responsible for discharging the Company's statutory obligations under Section 9 of the Electricity Act 1989, namely:

- to develop and maintain an efficient, coordinated and economical transmission system;
- to facilitate competition in the supply and generation of electricity;
- to have due regard for the effects of proposals on the environment.

Power System Development undertakes the transmission system analysis and design work which allows both new and existing generators and suppliers of electricity access to the transmission system. It is also responsible for developing the system infrastructure to meet evolving requirements, such as power station closures or increased power flows. In proposing capital investment, Power System Development seeks to achieve maximum utilization of the existing transmission system and, where appropriate, to minimize the need for new circuits and substation equipment whilst achieving the right balance between economy, security of supply, facilitating competition and regard to the environment.

Main functions:

- Power system simulation and analysis.
- Applications to connect.
- Infrastructure development.
- Seven Year Statement.
- Justification of NGC's development proposals at public inquiries.
- Reviewing security standards.
- Feasibility and consultancy studies.
- Analytical studies of:
 - power flow;
 - voltage performance;
 - short circuit level;
 - transient and dynamic stability;
 - economic performance.

Organization

PSD is organized into three groups:

- PSD North and South undertake the detailed design of the transmission system in their respective areas including the processing of applications for connection to the grid.
- PSD National collects and manages the wide range of data used to plan the transmission system, performs specialized technical analyses, produces NGC's annual Seven Year Statement and undertakes other investigations concerning the national transmission system as a whole.

IV. COMMERCIAL

The Commercial Department's overriding responsibility is to manage PNB's commercial interests while maintaining good working relationships with all parties, providing value for money for the services provided and complying with the Transmission License. This involves inter-relationships with customers (i.e., the Generators and Suppliers who utilize the transmission system), potential customers and OFGEM as well as close team working with all business units within NGC.

Main functions:

- Charging principles;
- New connections;
- Revenue recovery;
- Demand forecasting;
- Generation summaries;
- Ancillary services contracts and settlements;
- Development of System Support services.

Organization

PNB Commercial is organized into five groups:

- Use of System responsible for charging principles, new connections and revenue recovery.
- Regulatory Strategy responsible for regulatory overview, cost of capital and the management of price condition reviewed determined by OFGEM.

- Economic and Forecasting responsible for demand forecasting and generation assessments.
- Ancillary Services Business responsible for all ancillary services contracts and settlements.
- Transmission Business Development responsible for the development and implementation of System Support activities.

V. TECHNICAL AUDIT UNIT

The Technical Audit Unit (TAU) addresses the longer term integrity of the National Grid transmission system.

Main functions:

- Application of new technologies.
- Functional specification of equipment.
- Compliance with Grid Code connection conditions and quality of supply standards.
- Technical support/consultancy.

Organization

TAU is organized into five groups:

- Application of New Technologies - examines developing transmission equipment and control technologies, with a view to improving the robustness and flexibility of the NGC transmission system. It prepares necessary strategies for application of these technologies.
- Functional Specification of Equipment – prepares functional specification of transmission and control equipment to ensure robust, flexible and economic purchase and utilization according to developing NGC needs.
- Compliance with the Grid Code Connection Conditions – carries out necessary checks to ensure both NGC and customer equipment complies with the Grid Code technical performance standards. This is done to ensure a level playing field for all members of the electricity market place.
- Compliance with the Grid Code Quality of Supply Standards – checks compliance of NGC and its customers with the Quality of Supply Standards included in the Grid Code. This ensures quality of supply to all customers connected to NGC transmission system.
- Technical Support/Technical Consultancy – provides technical support to NGC Departments and Businesses, and Technical Consultancy Services for both internal and external customers.

The Grid Operator's responsibilities under Pooling and Settlement Agreement (PSA)

The Grid Operator's duties, responsibilities and obligations are defined in article 49 (Responsibilities) of Part X (the Grid Operator's responsibilities) of PSA. These include:

PORTHOLE: Ensuring that, insofar as relevant to the operation of the Settlement System and the Pool Rules, PORTHOLE⁴ will in its operation comply with its user and functional specifications.

Services: Making available to any successor Settlement System Administrator those services necessary for the proper functioning of the Settlement System which the Grid

⁴ PORTHOLE is the database which allows the transfer of operational information from the Grid Operator to the Settlement System Administrator.

Operator made available to the incumbent Settlement System Administrator at any time in the twelve month period prior to the resignation or removal of such incumbent Settlement System Administrator, in any such case upon such terms as may be agreed between the Grid Operator, such successor Settlement System Administrator and the Executive Committee.

Transport Uplift: Making payments in relation to Transport Uplift.

Dispatcher's Liability.

1. In the UK, there is no specific legal liability on the dispatcher. This approach is explained by the fact that the British law is generally not proscriptive (i.e. it says what you must not do, rather than what you must do). Licenses, which are issued in accordance with the Electricity Act 1989 and, more recently, the Utilities Act 2000, govern the obligations of electricity operators. The law basically provides that operators must not operate without a license, leaving it entirely to the licenses to specify the obligations and responsibilities. There are some specific exceptions to this, mainly relating to safety and environmental issues (governed by separate legislation).

2. The main functions of NGC as dispatcher are therefore specified under the transmission license. However, further details concerning dispatch responsibilities are contained in the Balancing and Settlement Code and in the Statement of Principles for Balancing Services⁵.

3. Should NGC fail to dispatch plant in accordance with its Statement of Principles (which is approved by the Regulator), the main redress available to market members would be either:

- (a) to request regulatory intervention (which is very likely) or, alternatively;
- (b) seek legal redress through a civil action in the courts (which is unlikely).

4. Note, however, that there is no statutory requirement laid down in the law that would oblige NGC to dispatch plant in any particular manner. There is a very good reason for this approach, namely that if such a provision were specified in the law, it would be too inflexible. Rather, the method of governance via licenses and the Statement of Principles produces a practical and flexible approach.

Standard of Care. Limitation of Liability under PSA

Among other duties, PSA contains provisions related to the general standard of care that NGC should adhere to while performing its duties as a Grid Operator and Ancillary Services Provider. It also specifies that in exercising of their duties GO and ASP are entitled to rely upon any direction or instruction of the Executive Committee or the Chief Executive if such direction or instruction have the express authority of all Pool Members. *PSA, clause 50.2, sub-clauses 50.2.1, 50.2.4 and clause 51.10, sub-clause 51.10.1, 51.10.4.* In its turn, GO and ASP should not act in accordance with the directions or instructions of the Pool Members unless the Pool Members act through the Executive Committee. *PSA, clause 50.2, 51.10 sub-clause 50.2.5, 51.10.5.*

Under PSA, no liability is attached to the GO/ASP as a result of due compliance by GO/ASP with any directions and instructions of the Authority, provided that in complying with such directions and instructions the GO/ASP are at all times acting in good faith. *PSA, clauses 50.2, 51.10 sub-clauses 50.2.2, 51.10.2.*

⁵ Statement of Principles for Balancing Services is a document that specifies exactly how NGC intends to carry out its license obligations for specific services.

PSA also provides for exceptions when GO and ASP in performing of their duties and responsibilities should not act in accordance with the directions or instructions of the Executive Committee or the Chief Executive, namely:

- (a) if to do so would cause the GO/ASP to breach any of its obligations under the Act or its Transmission License; or
- (b) if the GO/ASP has reasonable grounds for believing that it would so breach any of such obligations and has consulted the Authority and the Authority has not indicated that in his view it would not involve any such breach; or
- (c) unless the Authority has indicated that, notwithstanding any such actual or potential breach, the Authority would not be minded to enforce compliance with those obligations under the Act or its Transmission License and the GO/ASP has received an indemnity reasonably satisfactory to it in respect of its acting in accordance with such directions and instructions.

In any such event the GO/ASP should promptly notify the Executive Committee.

However, if the GO/ASP have a concern it is properly and reasonably founded that in acting in accordance with any direction or instruction of the Executive Committee or the Chief Executive, the GO/ASP breach one or more of their obligations under the Act or Transmission License, GO/ASP should discuss the matter with the Executive Committee. If having discussed the matter with the Executive Committee, the matter remains unsolved, the GO/ASP should either comply with such direction or instruction or by notice in writing refer the same to the Authority. In such notice the GO/ASP should set out in full the directions or instructions given to the GO/ASP and the grounds for such concern which should also be copied to the Executive Committee. Pending any guidance from the Authority in response to any such reference and, provided that the Authority shall not express any view that such reference is misconceived, vexatious or in respect of an improperly or unreasonably founded concern, the GO/ASP are not liable to any of the other Parties for refusing to act in accordance with the relevant direction or instruction. However, if the Authority expresses such a view, the GO/ASP are then liable. *PSA, clauses 50.2, 51.10 sub-clauses 50.2.8., 51.10.8.*

Obligations of GO and ASP under Transmission License

The obligation of the Grid Operator to implement and comply with Grid Code is contained in the Transmission License, Condition 8.

In preparing, implementing and complying with Grid Code, the Grid Operator should not unduly discriminate against or unduly prefer:

- a. any one or any group of persons, or
- b. the Grid Operator in the conduct any business other than the Transmission Business in favor of or as against any one other or any other group of person.

The Authority may issue directions relieving the Grid Operator of its obligations to implement or comply with Grid Code in respect of such parts of the Grid Operator's transmission system and/or to such extent as may be specified in the directions.

Ancillary Services and the Ancillary Services Provider

Part XI of the PSA specifies the bases of carrying out the Ancillary Services Business and obligations of the Ancillary Services Provider. According to article 51, sub-clause 51.2 the Ancillary Services Providers shall:

1. implement, maintain and operate all such systems as are necessary to enable it properly to carry on the Ancillary Services Business in accordance with the Transmission License;
2. operate the Ancillary Services Business in an efficient and economic manner;
3. maintain such records, data and other information as the Pool Auditor may from time to time by notice in reasonable detail to the Ancillary Services Provider reasonably require for the purposes of this Part XI or as may otherwise be reasonably necessary to enable the Ancillary Services Provider to comply promptly and fully with its obligations under this Agreement;
4. retain in electronic or machine readable form for a period of not less than eight years (or such longer period as the Pool Auditor may from time to time reasonably require), copies of all records, data and information referred to in Clause 3 in respect of the Ancillary Services;
5. provide to the Settlement System Administrator who shall promptly provide the same to each Supplier monthly and annual statements giving aggregate payment details separately in respect of each of the following items: (a) Reactive Energy; (b) frequency control; (c) Black Start Capability; (d) lost opportunity costs; (e) supplies of Ancillary Services to Externally Interconnected Parties; (f) adjustments for disputes which have been settled or otherwise determined; and (g) the Ancillary Services Provider's business charges, together with a statement of the sum of all such items, and each of the Parties agrees to such information being so provided; and
6. ensure that all agreements or arrangements for the provision of Ancillary Services to Externally Interconnected Parties are on the best commercial terms reasonably available.

The Settlement System Administrator

Energy Settlements and Information Services (ESIS) is appointed by each Pool Member and agrees to act as the initial Settlement System Administrator on and subject to the terms and conditions of the SSA Arrangements. *PSA, part VI, clause 26. (Appointment).*

The Settlement System Administrator's responsibilities

The duties, responsibilities and obligations of the Settlement System Administrator are provided in Settlement System Arrangements which is Schedule 4 of PSA. The responsibilities of SSA specified in SSA Arrangements relate to maintenance of the Settlement System, quality management system, software development, metering as well as advisory obligations. Please let us know if you'd like to have a full list of SSA's duties and responsibilities. Among the other duties, it is stipulated that shall SSA make and maintain arrangements with the Grid Operator and the Ancillary Services Provider in accordance with Clause 29.2 (see explanation below).

Interaction between Market Operator - Settlement System Administrator (SSA) and System Operator - the Grid Operator (GO) and the Ancillary Services Provider (ASP)

The interaction between SSA and GO and ASP is determined in Pooling and Settlement Agreement (PSA). Part VII (The Settlement System Administrator's responsibilities), clause 29.2 specifies that each of the SSA, GO and ASP shall make and maintain arrangements with each other whereby the data and other information that may be collected or received by any of them or necessary for the purposes of the Settlement System, the Ancillary Services Business or the operation of the NGC Transmission System or the performance by the GO of its obligations under the NGC Transmission License shall be provided to such other. The data and other information is provided to the extent necessary to enable SSA, GO and ASP to perform its or their respective obligations under PSA, the Grid Code, any Ancillary Services Agreement and/or the NGC Transmission License. Thus, each of the

parties agrees to the release of all such data and other information in the circumstances described in clause 29.2 of PSA.

Type 1 Support and Maintenance Agreement

Type 1 Support and Maintenance Agreement (T1SMA) means a support and maintenance agreement, based on the principles set out in Appendix 4, Schedule 35 of PSA agreed and entered into between NGC and the Settlement System Administrator in accordance with sub-section 3.3 thereof.

Appendix 4 sets out the principal terms of the Type 1 Support and Maintenance Agreement entered into by NGC and the Settlement System Administrator in connection with the Type 1 Goal License⁶.

Appendix 4 also provides a description of the maintenance service. The basic maintenance services comprise (i) assistance with critical problems, (ii) error correction, Emergency Fixes and provision of corrections to the Licensee and (iii) provision of a telephone helpline.

Licensee's Obligations under T1SMA

In order that NGC can properly provide the maintenance services, the licensee will be required to undertake certain obligations with regard to the use of the licensed program. By way of example these include undertaking (i) to keep full security copies of its own databases and computer records, (ii) not to permit anyone other than NGC to provide maintenance services and (iii) to co-operate fully with NGC in the diagnosis of any error or defect.

Settlement GOAL (SSGOAL)/Unconstrained Schedule

Settlement System Administrator uses the Settlement GOAL suite to produce the Unconstrained Schedule. Offer Data, demand forecast and planned reserve form the input required for the running of the Settlement GOAL computer program. The Demand Forecasting group at NGCC notifies ESIS by 10am each day of the forecast nominal demand for salient points. This is based on historic demand data, weather and other auditable factors which may have an effect. The Settlement GOAL program schedules gensets from the merit order so that for each half hour of the Availability Declaration Period the forecast demand can be met by the least expensive gensets.

The Settlement GOAL program is the basis from which the SMP is derived so constraints on particular generators throughout the country cannot be included otherwise a fair price for electricity would not be achieved.

The output of the Unconstrained Schedule consists of spot values in MW at each half hour of the Availability Declaration Period. This output is transferred electronically to ESIS by 14:00 every day. ESIS converts the spot values into half hourly Settlement Period values in MWh.

For further information in respect of the utilization of GOAL, please refer to the section Principles Applying to SAV Licenses.

The Generation Schedule

⁶ Type 1 Goal License means a license granted by NGC in accordance with Section 3 to the Settlement System Administrator.

Compilation and Issuance of the Generation Schedule

The procedure of the compilation and issuance of the Generation Schedule is defined in the Grid Code (in Section “Scheduling and Despatch Code No. 1” (“SDC”)) and Transmission License (Condition 7).

According to SDC 1.4.5 (The Generation Schedule), a Generation Schedule is compiled daily by NGC as a statement of which Despatch Units and Generation Trading Blocks may be required for the next following Schedule Day. Please let us know whether you need details in this regard. For the purposes of producing the Generation Schedule and for scheduling Centrally Despatched Generating Units, NGC uses computer program BPS GOAL.

Objective

The procedure for submission of Generation Offer Prices and Generation Trading Block Offer Prices is intended to enable NGC to prepare merit order to be used in the Scheduling and Despatch process. The preparation and issue of a Generation Schedule is required to ensure the integrity of the NGC Transmission System, the security and quality of supply and that there is sufficient generation to meet NGC Demand at all times together with an appropriate margin of reserve.

The Generation Schedule is issued to:

- (i) Network Operators;
- (ii) The Energy Management Centers of the Generators or the Generator direct;
- (iii) Externally Interconnected Parties.

Merit Order

NGC schedules and issues direct instructions for the despatch in accordance with the merit order system⁷. The principle of merit order is a stack of marginal unit generation costs for each Unit on the system (lowest cost at the bottom and highest costs at the top). This merit order enables the Scheduler and Dispatcher at the Control Centers to decide which generators are required to generate electricity to meet the demand throughout the day in the most economic and efficient manner.

The obligation of NGC to establish and operate a merit order system for generation sets in England and Wales is contained in Condition 7, item 3 of the Transmission License.

The factors that NGC takes into account while scheduling and issuing direct instructions for the despatch include:

- a. forecast demand (including transmission losses);
- b. economic and technical constraints from time to time imposed on the total system or any part or parts thereof;
- c. the dynamic operating characteristics of available generation sets and interconnector transfers;
- d. forecast export of electricity across any interconnector; and
- e. other matter provided for in the Grid Code.

⁷ Merit Order System means a system establishing economic precedence of electricity from available generation sets or interconnector transfers to be delivered or transferred to the total system.

NGC schedules and issues direct instructions for the despatch of such generation sets and interconnector transfers that available to generate or transfer electricity:

- a. in ascending order of the prices that are offered in respect of any half-hour for the generation and delivery or transfer of electricity into the total system by them; and
- b. as will in aggregate be sufficient to match at all times demand forecast with an appropriate margin of reserve.

Control Scheduling and Despatch Code No. 2 (“SDC2”) sets out the procedure for NGC to issue Despatch instructions to Generators in respect of their Despatch Units, to Externally Interconnected Parties and in relation to Ancillary Services, to carry-out a re-optimizing Scheduling process as may be required in NGC’s reasonable opinion and others as defined in SDC2.1.1.

Objective

The procedure for the issue of Despatch instructions to Generators, to Externally Interconnected Parties and in relation to Ancillary Services, the re-optimizing of Schedules, and others is intended to enable NGC to match continuously, using merit order, Despatch Unit and Generation Trading Block output to NGC Demand together with an appropriate margin of reserve whilst maintaining the integrity of the NGC Transmission System together with the security and quality of supply.

According to SDC 2.4.3.7 (Communication with Generators), despatch instructions are given by telephone (and will include an exchange of operator names) or by automatic logging device. Please let us know whether you need a sample of the form of despatch instruction. The despatch instructions must be formally acknowledged immediately by the Generator at the Control Point for the Generating Plant in respect of that Despatch Unit by telephone or automatic logging device, or a reason of given immediately for non-acceptance, which may only be on safety grounds or because they are not in accordance with the applicable Offered Availability, Generation Scheduling and Despatch Parameters or Generation Other Relevant Data.

In the event that in carrying out the Despatch instructions, an unforeseen problem arises, caused on safety grounds (relating to personnel or plant), NGC must be notified without delay by telephone.

The Generator in its turn should comply with all Despatch instructions properly given by NGC unless the Generator has given notice to NGC regarding non-acceptance of Despatch instructions as referred to above.

The response times for Generators and the procedures by which the response time is changed is agreed from time to time between NGC and the Generators.

Pool Auditor. Scheduling and despatch reviews

The objective and scope of the scheduling and despatch reviews as well as engagement of the Pool Auditor are defined in the Pooling and Settlement Agreement. PSA Part IX, item 47.2, Schedule 19 of PSA and Grid Code.

The Pool Auditor is appointed by the Grid Operator (after consultation with the Executive Committee). The Pool Auditor should be a firm of accounts of internationally recognized standing as approved by the Executive Committee that carries out annually reviews of the Scheduling and Despatch processes under the Grid Code.

1. The objective of the Scheduling and Despatch Review (SDR) are to establish that:
 - 1.1 scheduling and despatch is carried out in accordance with the Scheduling and Despatch Code; and
 - 1.2 information is entered into PORTHOLE⁸ in accordance with the Pool Rules.
2. The scope of the review are to:
 - 2.1 review internal scheduling and despatch operating procedures for consistency with the Scheduling and Despatch Code;
 - 2.2 review the internal checks that the Grid Operator has established to ensure that the operation of scheduling and despatch has been carried out in accordance with the procedures referred to in sub-section 2.1;
 - 2.3 perform compliance testing of the operation of the internal checks referred to in sub-section 2.2;
 - 2.4 review the operating procedures in relation to the use of the Generation Schedule Goal program, including:-(a) controls over the input of data and the output of data to establish that they are appropriate to ensure an adequate level of control; and (b) procedures for the retention of records of the nature and extent of and reasons for any manual adjustments to Generation Schedule Goal output or where Generation Schedule Goal is run using non-standard parameters, for consistency with the Scheduling and Despatch Code;
 - 2.5 perform compliance testing of the operating procedures referred to in sub-section 2.4;
 - 2.6 review the operating procedures referred to in sub-sections 2.1, 2.2 and 2.4 to establish that there is no bias in favour of or against any particular Pool Member on the part of the Grid Operator;
 - 2.7 review the operating procedures relating to the recording of despatch instructions, availability declarations, generation offer prices and the application of reason codes and the entry of data into PORTHOLE for consistency with the Pool Rules;
 - 2.8 perform compliance testing of the operating procedures referred to in sub-section 2.7;
 - 2.9 review the operating procedures referred to in sub-section 2.1 to establish that in the call for the delivery of Ancillary Services by the Grid Operator there is no bias in favour of or against any particular Pool Member on the part of the Grid Operator;
 - 2.10 review the call for the delivery of Ancillary Services;
 - 2.11 compare the generation schedule forecast demand with actual demand;and
 - 2.12 review the generation schedule forecast demand for consistency with Section OC1 of the Grid Code.

Any opinion or report of the auditor carrying out the Scheduling and Despatch Review should be addressed to the Grid Operator (for its own benefit) and a copy thereof sent to the Executive Committee and to each Pool Member, the Authority, the Settlement System Administrator and the Pool Funds Administrator (each of whom shall be entitled to rely on it).

The costs incurred in connection with Scheduling and Despatch Review are borne by the Grid Operator.

Principles Applying to SAV Licenses

The principles applying to SAV Licenses⁹ are set out in Appendix 2, Schedule 35 of PSA.

The licensed program under each SAV License will be Goal. Goal includes Settlement Goal and such other computer programs in machine readable code as are necessary to enable its stand alone use.

Scope of Use

The SAV License will permit use of the licensed program by the licensee as indicated in Table

License Type Permitted Use

Type 2 Goal License	The licensee may use the licensed program solely in relation to its own business needs (including without limitation, the checking and submission of its own offer data) in connection with the Pool. Use of the licensed program for performing operational functions such as those of the Grid Operator or the Settlement System Administrator is expressly prohibited.
Type 3 Goal License	The licensee may use the licensed program solely to provide bureau services to Parties in relation to their own business needs (including, without limitation, the checking and submission of such Parties' own offer data) in connection with the Pool. Use of the licensed program for performing operational functions such as those of the Grid Operator or the Settlement System Administrator is expressly prohibited.
Type 5 Goal License	The licensee may use the licensed program solely for the purpose of (a) instructing Pool Members which are its

⁹ "SAV License" means any Type 2 Goal License, Type 3 Goal License, Type 5 Goal License, Type 6 Goal License, Type 8 Goal License or Type 9 Goal License or such other license granted pursuant to the provisions of sub-section 4.2.

	<p>affiliates as to the data to be submitted including the checking and submission of such Pool Members' own offer data, and (b) providing bureau services to Pool Members which are its affiliates in relation to their own respective business needs (including the checking and submission of such Pool Members' own offer data), in each case in connection with the Pool. Use of the licensed program for performing operational functions such as those of the Grid Operator or the Settlement System Administrator is expressly prohibited.</p>
<p>Type 6 Goal License</p>	<p>The licensee may use the licensed program solely for the purposes of instructing Pool Members which are its affiliates as to the data to be submitted in connection with the Pool. Use of the licensed program for performing operational functions such as those of the Grid Operator or the Settlement System Administrator is expressly prohibited.</p>
<p>Type 8 Goal License</p>	<p>The licensee may use the licensed program solely in relation to its own business needs and for the purpose of providing bureau services to its affiliates (including, without limitation, the checking and submission of Pool Members' offer data) in connection with the Pool. Use of the licensed program for performing operational functions such as those of the Grid Operator or the Settlement System Administrator is expressly prohibited.</p>
<p>Type 9 Goal License</p>	<p>The licensee may use the licensed program solely in relation to its own business needs and for the purpose of providing bureau services to its affiliates and to non-affiliated Pool Members (including, without limitation, the checking and submission of Pool Members' offer data) in connection with the Pool. Use of the licensed program for performing operational functions such as those of the Grid Operator or the Settlement System Administrator is expressly prohibited.</p>

Support and Maintenance

If requested by the licensee NGC will provide support and maintenance for the licensed program, such support and maintenance to include any of the following if requested by the licensee:

- (A) providing a telephone help service;
- (B) keeping the licensed program in step with the version used by the Settlement System Administrator for the purposes of producing schedules as required by the Pool Rules;
- (C) keeping the licensed program in step with Generation Schedule Goal;
- (D) providing training pursuant to the On-Going Training Requirements for SAV (NGC/GRP/579A10.1).

capacity) Market Rules”.