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AS NESI IS WEAVING ITS WAY INTO TEM

IS MARKET / INFRASTRUCTURE READY

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PHYSICAL TRANSACTION OF THE MARKET BY THE SYSTEM OPERATOR

- Prediction of active (MW) power requirement of the grid based on actual system generation, captured at 06:00Hrs daily.
- Production of a workable generation schedule to meet this requirement; through the review of plant availability as declared (nominations) by all Gencos on the grid. The schedule is to provide for an effective spinning reserve.
- Generate Grid load allocation based on NERC template, as provided for in the MYTO II Distribution Order within the confines of the above workable generation schedule.
- SO then instructs the generators to commit their units according to the schedule and on continuous basis monitor the system to ensure compliance in load allocation by Discos and by extension the grid stability.

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MYTO II Load allocation formula assumes an ideal Electrical Power System situation, its application is inhibited and could not be strictly adhered to by the NESI environment we operate, which is characterized by insufficient generation to meet demand on an almost continuous basis, amidst some technical constraints in the grid network; which are:

- Non robust transmission infrastructure(cannot meet N-1 criterion without security constrained power flow)
- Inadequate or Low level generation (due to gas constraint)
- Lack of spinning reserve (zero at the moment)
- Inadequate network compensation

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To ameliorate the above technical constraints, SO in conjunction with NIAF fashioned out four Operational Procedures (OPs) applicable to NESI environment. These are:

- TRANSMISSION OFF-TAKE ALLOCATION AND BALANCING (OP13)
- TRANSITION ANCILLARY SERVICES (OP15)
- CAPACITY AND START-UP EVALUATION (OP18)
- INSTRUCTIONS RECORDING (OP19)

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OP 13 TRANSMISSION OFF-TAKE ALLOCATION AND BALANCING

This procedure is required under the Transition Market Rules to allocate the output from generation between the parties taking delivery from the Transmission Grid system called the transmission off-take parties (TOPs) which are:

- Distribution companies (DISCOS)
- Directly connected customers (DCC) and
- Exports to other countries

Imbalances can be positive or negative and when fully calculated across all off-takers, plus transmission losses will sum to zero.

In OP13, a party who is owed money has not taken all its allocated quantity, its imbalance is positive. If on the other hand, a party who owes money has a negative imbalance it means that it has taken more than its allocated quantity.

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OP 15 TRANSITION ANCILLARY SERVICES PROCEDURE

This procedure is put in place for system stability and maintenance of power quality. It requires that the generators providing the AS declare their capability during the next day nominations to enable SO instruct the generators to provide the AS when the need arises and also to measure its delivery.

Ancillary Services contracts have been put in place between the System Operator and generators for the provision of reserve, frequency control, voltage control (including synchronous compensation) and black start.

AS market is different from the Energy market so also its settlement. The generators issue invoices to the SO for the AS delivered, the SO checks and confirms the invoice and submits it to the Market Operator and then the MO pays the generators.

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OP 18 CAPACITY AND START-UP EVALUATION

Under the Market Rules, each Genco must declare the Generation Capacity for each of its generating units, and in accordance with the Grid Code (clause 4.3.2 - duty to test parameters – particularly availability); the System Operator on behalf of the Market Operator will have the right to verify that the declared capacity is valid.

The Genco's Generation Capacity is the maximum power (MW) that the generating unit can send out continuously. Capacity evaluation process is carried out with:

- SCADA and AMR in operation at the power station;
- SCADA only;
- AMR only; or
- Both out of operation;

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OP 19 INSTRUCTIONS RECORDING PROCEDURE

The Grid Code stipulates that in order to have an orderly control of the system, generators are required to adhere to the SO instructions. If generators do not adhere to the SO instruction, its excess or deficit generation is considered as uninstructed generation.

Under the Market Rules, uninstructed generation will be heavily penalised. The application of penalties on uninstructed generation is common to all electricity markets.

SO instructions to the generators must be clearly given, recorded and reported so that uninstructed generation can be calculated correctly and penalties can be applied accordingly.

This procedure is written in terms of the current NESI environment of inability to generally meet load and it does not cover load-management instructions to Discos.

CONCLUSION

In the Interim and pending the declaration of TEM by Honourable Minister of Power, whereby all Industry Agreements would be sanctified sequel to the meeting of all the conditions precedent for the declaration of the market by all stakeholders.

Technical constraints would continue to be addressed by the aforementioned Operational Procedures until such a time the grid system becomes robust enough to play its expected role in the market, going forward.

Because of the significant role of power plant capacities in the energy market settlement, revalidation of unit capacities of individual power plants has become absolutely necessary for transparency in the market.

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Thanks