

Republic of the Philippines  
**ENERGY REGULATORY COMMISSION**  
San Miguel Avenue, Pasig City

RECEIVED BY: *Meep* ROMELYN A. DOLOR  
DATE: 3/27 TIME: 8:37 AM

IN THE MATTER OF THE  
APPLICATION FOR THE  
APPROVAL OF THE  
UPGRADING OF PANITAN-  
NABAS 138 KV  
TRANSMISSION LINE, WITH  
PRAYER FOR THE ISSUANCE  
OF A PROVISIONAL  
AUTHORITY

ERC CASE NO. 2014-181 RC

NATIONAL GRID  
CORPORATION OF THE  
PHILIPPINES (NGCP),  
Applicant.

X-----X

DOCKETS  
Date: MAR 25 2015  
*[Signature]*

**ORDER**

On December 12, 2014, the National Grid Corporation of the Philippines (NGCP) filed an application for the approval of the Upgrading of Panitan-Nabas 138 kV Transmission Line, with prayer for the issuance of a provisional authority.

In the said application, NGCP alleged, among others, the following:

1. It is a corporation created and existing under the laws of the Philippines, with principal office address at NGCP Building, Quezon Avenue corner BIR Road, Diliman, Quezon City. It is the corporate vehicle of the consortium which was awarded the concession to assume the power transmission functions of the National Transmission Corporation (TRANSCO) pursuant to Republic Act No. 9136 (R.A. 9136), otherwise known as the Electric Power Industry Reform Act

of 2001 or the EPIRA. It was also awarded by Congress a franchise under R.A. 9511 (NGCP Franchise) to operate, manage, and maintain the nationwide transmission system of the Republic of the Philippines;

### STATEMENT OF THE CASE

2. One of its functions and responsibilities enumerated in Section 9 of the EPIRA is to *"improve and expand its transmission facilities, consistent with the Grid Code and the Transmission Development Plan (TDP) to be promulgated pursuant to this Act, to adequately serve generation companies, distribution utilities and suppliers requiring transmission service and/or ancillary services through the transmission system: Provided, That TRANSCO (now NGCP) shall submit any plan for expansion or improvement of its facilities for approval by the ERC."* Also, pursuant to its franchise, it is also authorized to construct, install, finance, manage, improve, expand, operate, maintain, rehabilitate, repair and refurbish the present nationwide transmission system;
3. In accordance with its mandate to ensure and maintain the quality, reliability, adequacy, security, stability and integrity of the Grid, it seeks authority from the Commission to immediately approve the implementation of the proposed upgrading of the Panitan-Nabas 138 kV Transmission Line, (the Project), which aims, among others, to meet the transmission capacity requirements of capacity additions and load centers;

### STATEMENT OF FACTS

4. In November 2013, Super Typhoon Yolanda with maximum sustained winds of 235 kilometers per hour (kph) near the center with gustiness of 275 kph, hit the Philippines and devastated many areas in the Visayas. The Panitan-Nabas 138 kV Transmission Line was one of the most damaged transmission lines, wherein 128 transmission towers toppled and were damaged;

5. Typhoon Yolanda was an exceptionally powerful tropical cyclone. The Joint Typhoon Warning Center (JTWC), a joint United States Navy – United States Air Force Task Force, responsible for issuing tropical cyclone warnings in the South Pacific Ocean, considered Yolanda as the strongest storm ever recorded to make landfall and the fourth most intense tropical cyclone ever observed in terms of wind speed;
6. As such, the wind velocities carried by Typhoon Yolanda surpassed the wind velocity design of the transmission lines in Visayas, which was at 240 kph based on the three wind zones described in Appendix A (Basic Wind Speed on Various Wind Zones for the Philippines) of the 2008 Philippine Electrical Code Part 2;
7. Based on the analysis conducted by the Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA), the trend of tropical cyclone occurrence or passage within the Philippine Area of Responsibility shows that there will be no increase in number of tropical cyclones per year, however, there will be an increase in number of tropical cyclones with maximum sustained winds of greater than 150 kph and above (typhoon category).<sup>1</sup> In view of these, NGCP considered new wind design criteria for new overhead transmission lines in Visayas;
8. The temporary structures such as Emergency Restoration System (ERS) were installed in order to address the power requirements of the customers connected to Nabas Substation, i.e. Boracay Island, Antique Electric Cooperative and Aklan Electric Cooperative (AKELCO). This interim scheme allowed NGCP to establish a by-pass transmission line that linked the remaining undamaged portions of the 138 kV line and provided transmission link towards Nabas Substation;
9. However, the temporary scheme has a limited transfer capacity of 100 MW due to the use of smaller conductor size of 1 x 336.4 MCM ACSR. Furthermore, the ERS may not be able to withstand any typhoon even with lesser wind velocities that will pass the Visayas, hence, making it highly

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<sup>1</sup> Published on PAGASA website: <http://www.pagasa.dost.gov.ph/climate-agromet/climate-change-in-the-philippines/116-climate-change-in-the-philippines/594-current-climate-and-observed-trends>

susceptible to damage which could lead to widespread power interruption;

10. Thus, there is an urgent need to implement the Project.

### **Brief Project Description**

11. The project involves the construction of 123 new steel tower structures along Panitan-Nabas 138 kV line adopting a new wind design criteria of 270 kph (from 240 kph). The typical tower design parameters for the proposed transmission line structures are as follows:

<b>Proposed Upgrading of Panitan-Nabas 138 kV Transmission Lines</b>			
<b>Tower Type</b>	<b>Suspension/ Tension/ Dead End</b>	<b>Line Angle (Degree)</b>	<b>Wind Span</b>
DT1sus-Z1-138	Suspension	0-2	400
DT1ten5-Z1-138	Suspension/ Tension	0-5	400
DT1ten15-Z1-138	Tension	0-15	400
DT1ten-Z1-138	Tension	0-45	400
DT1de45-Z1-138	Dead End	0-45	300

12. These towers shall require construction of new foundations suitable for the new wind design criteria. Existing limits for the rights-of-way for the Panitan-Nabas 138 kV line shall be utilized. However, additional rights-of-way may be required, as other towers shall be located at new sites to be able to construct new foundations;

### **Project Cost Estimate**

13. The estimated cost of the Project is Nine Hundred Thirty-Three Million Seven Hundred Seventy-Four Thousand One Hundred Ninety-One and 90/100 Pesos (PhP933,774,191.90);

### **Justification**

14. The temporary scheme employed has a limited transfer capacity of 100 MW. Moreover, the by-pass lines are supported mostly by steel pole structures designed for

15. lower voltage level. Hence, the design capability of the by-pass lines to maintain the required line clearances is limited. As a result, swinging of transmission line conductors due to strong winds causes fault along the line as the energized conductors may come in contact with nearby vegetation. There is higher possibility of outage due to line to ground fault which will result to overloading of the transformers and load curtailment at Panitan Substation;
16. The proposed project shall have the following justifications for implementation:
  - a. To minimize exposure to fault along the temporary by-pass lines for the Panitan-Nabas 138 kV lines. Thus, there will be minimal load curtailment and interruption of power delivery towards the major loads being served by Nabas Substation should there be an outage of the single-circuit Panitan-Nabas 138 kV line;
  - b. To increase the maximum transfer capacity of the Panitan-Nabas 138 kV line to 180 MW; and
  - c. It may be able to retrieve the temporary structures used for the by-pass lines to ensure sufficient availability of temporary structures for future emergency use;

**Allegation in Support of the Prayer for Provisional Approval**

17. The power restoration activities undertaken in Panitan-Nabas 138 kV line involved the use of ERS, lightweight modular towers and steel pole structures designed for lower voltage level;
18. There is an urgent need to implement the Project to construct permanent towers and put up conductors along Panitan-Nabas 138 kV transmission line in order to upgrade the line and minimize fault exposure which will eventually result to load curtailment in Panitan Substation and interruption of power;
19. It will help achieve the maximum transfer capacity of 180 MW along Panitan-Nabas 138 kV Transmission Line;

20. Due to the extensive damage caused by Typhoon Yolanda, it was constrained to borrow steel pole structures from its district offices to use for the by-pass line in Panay. Thus, it needs to retrieve the temporary structures used for the by-pass lines to ensure sufficient availability of temporary structures for future emergency use, not only in Panay, but also in other provinces;
21. There is a need to file an application with prayer for issuance of a provisional authority before the Commission to be able to implement the project;
22. A copy of the Judicial Affidavit of Engr. Christian Ereño, Head of the Visayas System Planning Division of NGCP is attached to the application as **Annex "B."**
23. It prays that the Commission:
  - a. Issue, immediately upon filing of the application, a provisional authority for the implementation of the upgrading of the Panitan-Nabas 138 kV transmission line project; and
  - b. Approve, after notice and hearing, the application for the implementation of the upgrading of the Panitan/Nabas 138 kV transmission line project; and render judgment making the provisional approval permanent.

Finding the said application sufficient in form and substance with the required fees having been paid, the same is hereby set for jurisdictional hearing, expository presentation, pre-trial conference and evidentiary hearing on **May 26, 2015 (Tuesday) at two o'clock in the afternoon (2:00 P.M.) at the ERC Hearing Room, 15<sup>th</sup> Floor, Pacific Center Building, San Miguel Avenue, Pasig City.**

NGCP is hereby directed to cause the publication of the attached Notice of Public Hearing, at its own expense, twice (2x) for two (2) successive weeks in two (2) newspapers of general circulations in the Philippines, with the date of the last publication to be made not later than ten (10) days before the date of the scheduled initial hearing. It is also directed to inform the consumers, by any other means available and appropriate, of the filing of the instant application, its reasons therefor, and of the scheduled hearing thereon.

Let copies of the application, this Order and the attached Notice of Public Hearing be furnished the Office of the Solicitor General (OSG), the Commission on Audit (COA), and the Committees on Energy of both Houses of Congress. They are hereby requested, if they so desire, to send their duly authorized representatives at the scheduled hearing.

Likewise, let copies of this Order and the attached Notice of Public Hearing be furnished the Offices of the Mayors of Quezon City and Cebu City and the Municipality of Panitan and Nabas for the appropriate posting thereof on their respective bulletin board.

NGCP is hereby directed to furnish all those making requests therefor with copies of the application and its attachments, subject to reimbursement of reasonable photocopying costs.

On the date of the initial hearing, NGCP must submit to the Commission its written Compliance with the jurisdictional requirements attaching therewith, methodically arranged and duly marked, the evidences on the actual posting and publication of the Notice of Public Hearing consisting of a certification issued to that effect, signed by the afore-mentioned Mayors or their duly authorized representatives, bearing the seals of their offices, and the affidavits of the Editors or Business Managers of the newspapers where the said Notice of Public Hearing were published together with the complete issues of the said newspapers, and such other proofs of compliance with the requirements of the Commission.

NGCP and all interested parties are directed to submit, at least five (5) days before the date of initial hearing and pre-trial conference, their respective Pre-trial Briefs containing, among others:

- a) A summary of admitted facts and proposed stipulation of facts;
- b) The issues to be tried or resolved;
- c) The documents or exhibits to be presented, stating the purposes and proposed markings therefore; and

- d) The number and names of the witnesses, with their written testimonies in an individual affidavit form, to be attached to the Pre-trial Brief.


Failure of NGCP to submit the required Pre-trial Brief and Judicial Affidavits of its witnesses within the prescribed period shall be a ground for cancellation of the scheduled hearing, and the resetting of which shall be six (6) months from said date of cancellation.

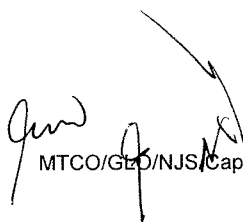
As part of the pre-trial conference, NGCP must also be prepared to make an expository presentation of its application, aided by whatever communication medium that it may deem appropriate for the purpose, in order to put in plain words and explain, for the benefit of the consumers and other concerned parties, what the application is all about and the reasons and justifications being cited in support thereof.

**SO ORDERED.**

Pasig City, March 16, 2015.

FOR AND BY AUTHORITY  
OF THE COMMISSION:

  
**ZENAIDA G. CRUZ-DUCUT**  
Chairperson

  
MTCO/GLO/NJS/Capex/2014-181 RC NGCP ORD.doc



**Copy Furnished:**

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Metro Manila
3. **THE COMMISSION ON AUDIT**  
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Diliman, Quezon City, Metro Manila
4. **THE COMMITTEE ON ENERGY**  
House of the Senate  
GSIS Building, Roxas Blvd., Pasay City, Metro Manila
5. **THE COMMITTEE ON ENERGY**  
House of Representatives  
Batasan Hills, Quezon City, Metro Manila
6. **Office of the City Mayor**  
Quezon City
7. **Office of the City Mayor**  
Cebu City
8. **Office of the Municipal Mayor**  
Municipality of Nabas  
Province of Aklan
9. **Office of the Municipal Mayor**  
Municipality of Panitan  
Province of Capiz

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NATIONAL GRID  
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PHILIPPINES (NGCP),  
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X-----X

DOCKETED  
Date: MAR 25 2015  
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## NOTICE OF PUBLIC HEARING

### TO ALL INTERESTED PARTIES:

Notice is hereby given that on December 12, 2014, the National Grid Corporation of the Philippines (NGCP) filed with the Commission an application for the approval of the upgrading of the Panitan-Nabas 138 kV Transmission Line Project, with prayer for the issuance of a provisional authority.

In the said application, NGCP alleged, among others, the following:

1. It is a corporation created and existing under the laws of the Philippines, with principal office address at NGCP Building, Quezon Avenue corner BIR Road, Diliman, Quezon City. It is the corporate vehicle of the consortium which was awarded the concession to assume the power transmission

functions of the National Transmission Corporation (TRANSCO) pursuant to Republic Act No. 9136 (R.A. 9135), otherwise known as the Electric Power Industry Reform Act of 2001 or the EPIRA. It was also awarded by Congress a franchise under R.A. 9511 (NGCP Franchise) to operate, manage, and maintain the nationwide transmission system of the Republic of the Philippines.

### **STATEMENT OF THE CASE**

2. One of its functions and responsibilities enumerated in Section 9 of the EPIRA is to *“improve and expand its transmission facilities, consistent with the Grid Code and the Transmission Development Plan (TDP) to be promulgated pursuant to this Act, to adequately serve generation companies, distribution utilities and suppliers requiring transmission service and/or ancillary services through the transmission system: Provided, That TRANSCO (now NGCP) shall submit any plan for expansion or improvement of its facilities for approval by the ERC.”* Pursuant to its Franchise, it is also authorized to construct, install, finance, manage, improve, expand, operate, maintain, rehabilitate, repair and refurbish the present nationwide transmission system;
  
3. In accordance with its mandate to ensure and maintain the quality, reliability, adequacy, security, stability and integrity of the Grid, it seeks authority from the Commission to immediately approve the implementation of the proposed upgrading of the Panitan-Nabas 138 kV Transmission Line Project (the Project), which aims, among others, to meet the transmission capacity requirements of capacity additions and load centers;

### **STATEMENT OF FACTS**

#### **Brief Background**

4. In November 2013, Super Typhoon Yolanda with maximum sustained winds of 235 kilometers per hour (kph) near the center with gustiness of 275 kph, hit the Philippines and devastated many areas in Visayas. The Panitan-Nabas 138 kV Transmission Line was one of the most damaged

transmission lines, wherein 128 transmission towers toppled and were damaged;

5. Typhoon Yolanda was an exceptionally powerful tropical cyclone. The Joint Typhoon Warning Center (JTWC), a joint United States Navy – United States Air Force Task Force, responsible for issuing tropical cyclone warnings in the South Pacific Ocean, considered Yolanda as the strongest storm ever recorded to make landfall and the fourth most intense tropical cyclone ever observed in terms of wind speed;
6. As such, the wind velocities carried by Typhoon Yolanda surpassed the wind velocity design of the said transmission lines, which was at 240 kph based on the three wind zones described in Appendix A (Basic Wind Speed on Various Wind Zones for the Philippines) of the 2008 Philippine Electrical Code Part 2;
7. Based on the analysis conducted by the Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA), the trend of tropical cyclone occurrence or passage within the Philippine area of responsibility shows that there will be no increase in number of tropical cyclones per year, however, there will be an increase in number of tropical cyclones with maximum sustained winds of greater than 150 kph and above (typhoon category).<sup>1</sup> In view of these, NGCP considered new wind design criteria for new overhead transmission lines in Visayas;
8. The temporary structures such as Emergency Restoration System (ERS) were installed in order to address the power requirements of the customers connected to Nabas Substation, i.e. Boracay Island, Antique Electric Cooperative and Aklan Electric Cooperative (AKELCO). This interim scheme allowed NGCP to establish a by-pass transmission line that linked the remaining undamaged portions of the 138 kV line and provided transmission link towards Isabel Substation;

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9. However, the temporary scheme has a limited transfer capacity of 100 MW due to the use of smaller conductor size of 1 x 336.4 MCM ACSR. Furthermore, the ERS may not be able to withstand any typhoon even with lesser wind velocities that will pass the Visayas, hence, making it highly susceptible to damage which could lead to widespread power interruption;
10. Thus, there is an urgent need to implement the Project.

**Brief Project Description**

11. The project involves the construction of 123 new steel tower structures along Panitan-Nabas 138 kV line adopting a new wind design criteria of 270 kph (from 240 kph). The typical tower design parameters for the proposed transmission line structures are as follows:

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12. These towers shall require construction of new foundations suitable for the new wind design criteria. Existing limits for the rights-of-way for the Panitan-Nabas 138 kV line shall be utilized. However, additional rights-of-way may be required, as other towers shall be located at new sites to be able to construct new foundations;

**Project Cost Estimate**

13. The estimated cost of the Project is Nine Hundred Thirty-Three Million Seven Hundred Seventy-Four Thousand One Hundred Ninety-One and 90/100 Pesos (PhP933,774,191.90);

### **Justification**

14. The temporary scheme employed has a limited transfer capacity of 100 MW. Moreover, the by-pass lines are supported mostly by steel pole structures designed for lower voltage level. Hence, the design capability of the by-pass lines to maintain the required line clearances is limited. As a result, swinging of transmission line conductors due to strong winds causes fault along the line as the energized conductors may come in contact with nearby vegetation. There is higher possibility of outage due to line to ground fault which will result to overloading of the transformers and load curtailment at Panitan Substation;
  
15. The proposed project shall have the following justifications for implementation:
  - a. To minimize exposure to fault along the temporary by-pass lines for the Panitan-Nabas 138 kV lines. Thus, there will be minimal load curtailment and interruption of power delivery towards the loads being served by Nabas Substation should there be an outage of the single-circuit Panitan-Nabas 138 kV line;
  
  - b) To increase the maximum transfer capacity of the Panitan-Nabas 138 kV line to 180 MW; and
  
  - c) It may be able to retrieve the temporary structures used for the by-pass lines to ensure sufficient availability of temporary structures for future emergency use.

### **Allegation in Support of the Prayer for Provisional Approval**

16. The power restoration activities undertaken in Panitan-Nabas 138 kV line involved the use of ERS, lightweight modular towers and steel pole structures designed for lower voltage level;

17. There is an urgent need to implement the Project to construct permanent towers and put up conductors along Panitan-Nabas 138 kV transmission line in order to upgrade the line and minimize fault exposure which will eventually result to load curtailment in Panit-an Substation and interruption of power;
18. It will help achieve the maximum transfer capacity of 180 MW along Panitan-Nabas 138 kV Transmission Line;
19. Due to the extensive damage caused by Typhoon Yolanda, it was constrained to borrow steel pole structures from its district offices to use for the by-pass line in Panay. Thus, it needs to retrieve the temporary structures used for the by-pass lines to ensure sufficient availability of temporary structures for future emergency use, not only in Panay, but also in other provinces;
20. There is a need to file an application with prayer for issuance of a provisional authority (PA) before the Commission to be able to implement the project;
21. A copy of the Judicial Affidavit of Engr. Christian Ereño, Head of the Visayas System Planning Division of NGCP is attached to the application as Annex "B"; and
22. It prays that the Commission:
  - a. Issue, immediately upon filing of the application, a provisional authority for the implementation of the upgrading of the Panitan-Nabas 138 kV transmission line project; and
  - b. Approve, after notice and hearing, the application for the implementation of the upgrading of the Panitan-Nabas 138 kV transmission line project; and render judgment making the provisional approval permanent.

The Commission has set the application for jurisdictional hearing, expository presentation, pre-trial conference and evidentiary hearing on **May 26, 2015 (Tuesday) at two o'clock in the afternoon (2:00 P.M.) at the ERC Hearing Room, 15<sup>th</sup> Floor, Pacific Center Building, San Miguel Avenue, Pasig City.**

All persons who have an interest in the subject matter of the proceeding may become a party by filing, at least five (5) days prior to the initial hearing and subject to the requirements in the ERC's Rules of Practice and Procedure, a verified petition with the Commission giving the docket number and title of the proceeding and stating: (1) the petitioner's name and address; (2) the nature of petitioner's interest in the subject matter of the proceeding, and the way and manner in which such interest is affected by the issues involved in the proceeding; and (3) a statement of the relief desired.

All other persons who may want their views known to the Commission with respect to the subject matter of the proceeding may file their opposition to the application or comment thereon at any stage of the proceeding before the applicant concludes the presentation of its evidence. No particular form of opposition or comment is required, but the document, letter or writing should contain the name and address of such person and a concise statement of the opposition or comment and the grounds relied upon.

All such persons who may wish to have a copy of the application may request the applicant, prior to the date of the initial hearing, that they be furnished with a copy of the application. The applicant is hereby directed to furnish all those making such request with copies of the application and its attachments, subject to reimbursement of reasonable photocopying costs. Likewise, any such person may examine the application and other pertinent records filed with the Commission during the usual office hours.

**WITNESS**, the Honorable Chairperson, **ZENAIDA G. CRUZ-DUCUT**, and the Honorable Commissioners, **GLORIA VICTORIA C. YAP-TARUC**, **ALFREDO J. NON**, and **JOSEFINA PATRICIA A. MAGPALE-ASIRIT**, **Energy Regulatory Commission**, this 16<sup>th</sup> day of March, 2015 at Pasig City.

  
**ATTY. FRANCIS SATURNINO C. JUAN**  
Executive Director III