



Volume determination of the strategic reserve for winter 2017-18:

Update 02 October 2017

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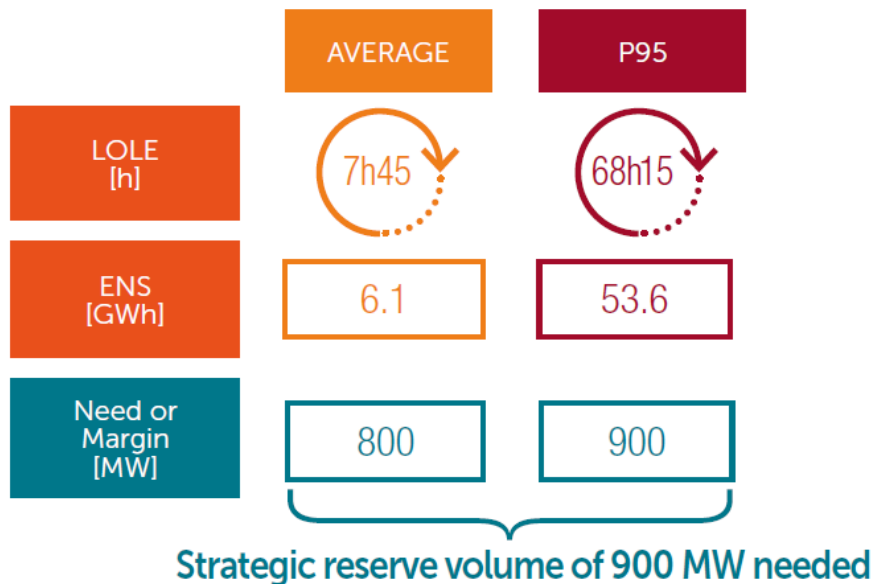
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1. Introduction

The “Adequacy study for Belgium: The need for strategic reserve for winter 2017-18 and outlook for 2018-19 and 2019-20” was published by Elia on its webpage on 1 December 2016.¹

The results for the winter 2017-18 ‘base case’ lead to a margin of 800 MW, with an average LOLE of 45 minutes and a LOLE95 of 1 hour. Under the assumptions made for this ‘base case’ scenario, the analysis did not identify a need for contracting strategic reserves for winter 2017-18 in order to meet the legal criteria.

Furthermore, several sensitivities were performed. With the absence of one nuclear unit in Belgium and nine nuclear units of 900 MW in France (see section 6.3.3 of the adequacy study for winter 2017-18), the analysis highlighted that a volume of 900 MW of strategic reserve would be necessary in order to satisfy the adequacy criteria defined by Belgian law. Below an extract of the results obtained in this case (from Figure 142 in the original winter 2017-18 assessment).



In this Figure LOLE [h] and ENS [GWh], both average and P95, refer to a situation without any strategic reserve volume.

The DG Energy provided its advice to the Minister on 15 December 2016 and the Minister instructed Elia to contract a volume of 900 MW strategic reserves for 3 years.

A letter from the Minister was received by Elia on 29 September 2017, with the request to perform an updated analysis of the need for strategic reserves for winter 2017-18, considering the return to the market of the Drogenbos, Izegem and Angleur units and based on the above mentioned sensitivity with absence of one nuclear unit in Belgium and nine nuclear units of 900 MW in France.

¹ <http://www.elia.be/en/products-and-services/Strategic-Reserve/Information-produit>

2. Main evolutions

Following the request of the Minister, Elia performed an extra analysis taking into account the return to the market of the following units:

- Drogenbos OCGT mode
- Angleur
- Izegem

Although the combined additional volume of the units above is equal to 300 MW, this value cannot be directly translated into a 300 MW reduction of the necessary volume of strategic reserve. This is explained by the fact that all individually modelled thermal units, amongst others the Drogenbos, Angleur and Izegem units, are taken into account with their respective forced outage rates. These rates were subject to a public consultation and were published together with the adequacy analysis report.² For the Drogenbos and Angleur units, the forced outage rate used is 8.2% whilst for the Izegem unit this rate was 15.2% (see Figure 54 of the winter 2017-18 assessment).

As on the other hand, the strategic reserve volume identified is considered to be 100% available, the additional 300 MW volume does not automatically result in a 300 MW reduction of the necessary strategic reserve volume due to the effect of forced outages.

3. Results

The above mentioned units were taken into account in the model with the absence of one nuclear unit in Belgium and nine nuclear units of 900 MW in France (see section 6.3.3 of the adequacy study for winter 2017-18).

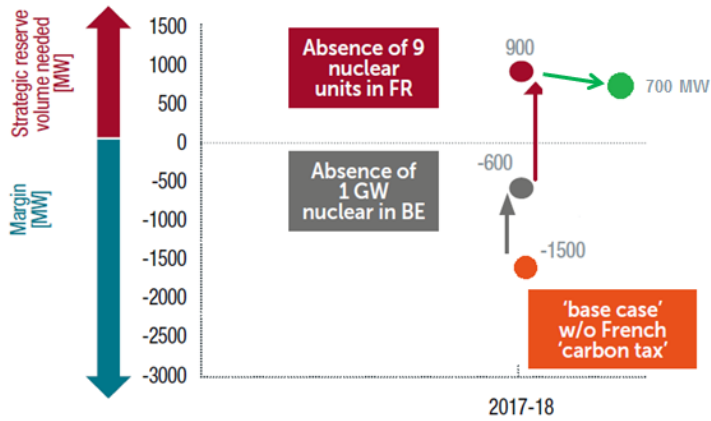
The updated analysis highlights that under these assumptions a volume of **700 MW of strategic reserves** would be necessary in order to satisfy the adequacy criteria defined by Belgian law.

In the course of this analysis, Elia also analysed a volume of 600 MW of strategic reserves. However, with 600 MW of strategic reserve the P95 of the LOLE values among the 'Monte-Carlo' years analysed would not be below 20 hours as defined by law. With a strategic reserve volume of 700 MW both legally defined adequacy criteria are satisfied.

The figure below summarizes the results obtained.

² http://www.elia.be/~media/files/Elia/Products-and-services/Strategic-Reserve/Final_data_volume_2017-2018.xlsx

Strategic reserve volume determination for winter 2017-18
 Return of Drogenbos (230 MW – OCGT), Izegem (20 MW), Angleur (2x25 MW) results in a need of 700 MW



Drogenbos :

- Engie specifying OCGT as normal operating mode.

Izegem

- Return to market 20 MW until 31/10/2019

Angleur 31-32:

- Return to market 2x25MW until 31/10/2019

Base scenario considered:

- Base case without French carbon tax
- 1 GW nuclear out in BE
- 9 nuclear units out in FR