



Update on the stress corrosion phenomenon and adjustment of 2022 French nuclear output estimate

EDF is continuing its inspection programme and is preparing, along with the nuclear industry, to repair sections of the pipes affected by stress corrosion. At this stage for 2022, EDF considers that it is not necessary to schedule new reactor outages and updates its French nuclear output estimate.

Twelve reactors, currently shut down, are being inspected for stress corrosion:

- Result of the metallurgical expertises carried out on samples taken from the pipes of the auxiliary circuits of the reactors of Civaux 1, Chooz 1 and Penly 1 confirmed the presence of stress corrosion near welds of the RIS (safety injection circuit) and RRA (shutdown reactor cooling circuit) circuits.
- Checks and expertises carried out on Chinon B3 confirm the absence of stress corrosion on the SIS circuit. Evidence of stress corrosion was located on a weld of the RRA circuit.
- Checks and investigations are ongoing on the other eight prioritized reactors (Civaux 2, Chooz 2, Cattenom 3, Bugey 3, Bugey 4, Flamanville 1, Flamanville 2 and Golfech 1).

EDF carried out ultrasonic inspections, investigations on pipes samples, digital welding simulations and studies to calculate the speed of propagation of stress corrosion.

At this stage, these analyses allow EDF to confirm slow stress-corrosion propagation and to observe the existence of a compression zone which blocks the propagation of the phenomenon.

EDF has defined an inspection programme for the entire nuclear fleet:

- In 2022, 900MW reactors will be inspected as part of their ten-year inspection visits. This concerns Tricastin 3, Gravelines 3, Dampierre 2, Blayais 1, and Saint-Laurent B2 reactors.
- The inspection programme for the 1,300MW reactors will be established after integrating the lessons learned from the appraisals and checks in progress on the auxiliary circuits of the Penly 1 reactor.

At this stage for 2022, EDF considers that new reactor outages do not need to be scheduled to carry out checks. Discussions are ongoing with the *Autorité de sûreté nucléaire* (French Nuclear Safety Authority) on the stress corrosion phenomenon inspection and repair programme.

The nuclear industry is making an unprecedented, concerted effort to replace the portions of the pipes affected by stress corrosion.

EDF has started to procure tubes and elbows from European steelmakers. Production rates have been optimised to deliver the first spare parts before summer.

All of the qualified suppliers to carry out these activities are now preparing for the work. Dozens of welders have been specially trained to guarantee high-quality workmanship.

In view of all of these aspects and EDF's decision to shut down impacted reactors and inspect the reactors likely to be impacted, ASN took note of EDF's actions.

All of these events require EDF to adjust its French nuclear output estimate for 2022 to 280-300TWh against 295-315TWh previously.

At this stage and in the expectation of checks and repairs to be completed, the 2023 French nuclear output estimate is not changed (300-330TWh).

For illustrative purposes, based on the information available to the Group at this stage and on the 2022 forward prices on 18 May 2022, the estimate of the impact of the decrease in output on the Group's EBITDA for 2022 is reassessed at approximately -€18,5 billion¹.

Based on these same facts, the end of 2023 EDF group's financial perspective is adjusted as follows: net financial debt/EBITDA ~3x or slightly higher than 3x, and adjusted net debt/adjusted EBITDA to ~5x^{2,3}.

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(1) Since 2018, customers are counted per delivery site. A customer can have two delivery points: one for electricity and another one for gas.

(2) Including ÉS (Électricité de Strasbourg) and SEI.

¹ Versus 14 billion euros (see financial communication Q1 2022 - May 4, 2022)

² Versus net financial debt/EBITDA ~3x and adjusted net debt/adjusted EBITDA 4.5x to 5x (at constant S&P methodology), see PR of May 4, 2022

³ Based on electricity prices for 2023 delivery on May 18, 2022 and excluding additional regulatory measures

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EDF SA
22-30 avenue de Wagram
75382 Paris cedex 08 - France
Capital of 1,868,467,354 euros
552 081 317 R.C.S. Paris
www.edf.fr

Contacts

Press:
+33 (0) 1 40 42 46 37

Analysts and Investors:
+33 (0) 1 40 42 78 36