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CORRECTION
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Corrigendum: Sizing of Hybrid Energy Storage Systems for Inertial and Primary Frequency Control

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A Corrigendum on

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In the original article, there was a mistake in **Figures 9** and **10**, and **Tables 1** and **2** as published.

There was a mistake in the parameters of the validation model presented in **Section 3 Results** [available in the reference Alves, E. F. (2021)]. The normalized moment of inertia reported in the article (M = 5.1 s) was wrongly multiplied by 4 in the MATLAB/Simulink model. Due to this error, **Figures 9** and **10** reported incorrect dynamics, and **Tables 1** and **2** reported incorrect values. The values for parameters ($t_a - t_0$) and ($t_b - t_a$) in **Table 1** were incorrectly reported as 25 s and 15 s, respectively. The correct values are 11 s and 18 s, respectively. The value for parameter E_{es1} in **Table 2** was incorrectly reported as 101.76 kWh, the correct value is 60 kWh. In addition to Figures 9 and 10, and **Tables 1** and **2**, corrections have subsequently been made to various reported values throughout the article, namely in **Section 3 Results, Sub-sections 3.1 study: a wind-powered offshore platform in the North Sea**, **3.2 Sizing of the Energy Storage System**, and **3.3 Sizing Validation**. The corrected **Figures 9** and **10**, and **Tables 1** and **2** appear below.

The authors apologize for this error and state that this does not change the scientific conclusions of the article in any way. The original article has been updated.

REFERENCES

Alves, E. F. (2021). Efantnu/hybrid-ess-design: Review 1 Release. version v1.1Zenodo. doi:10.5281/zenodo.4601067

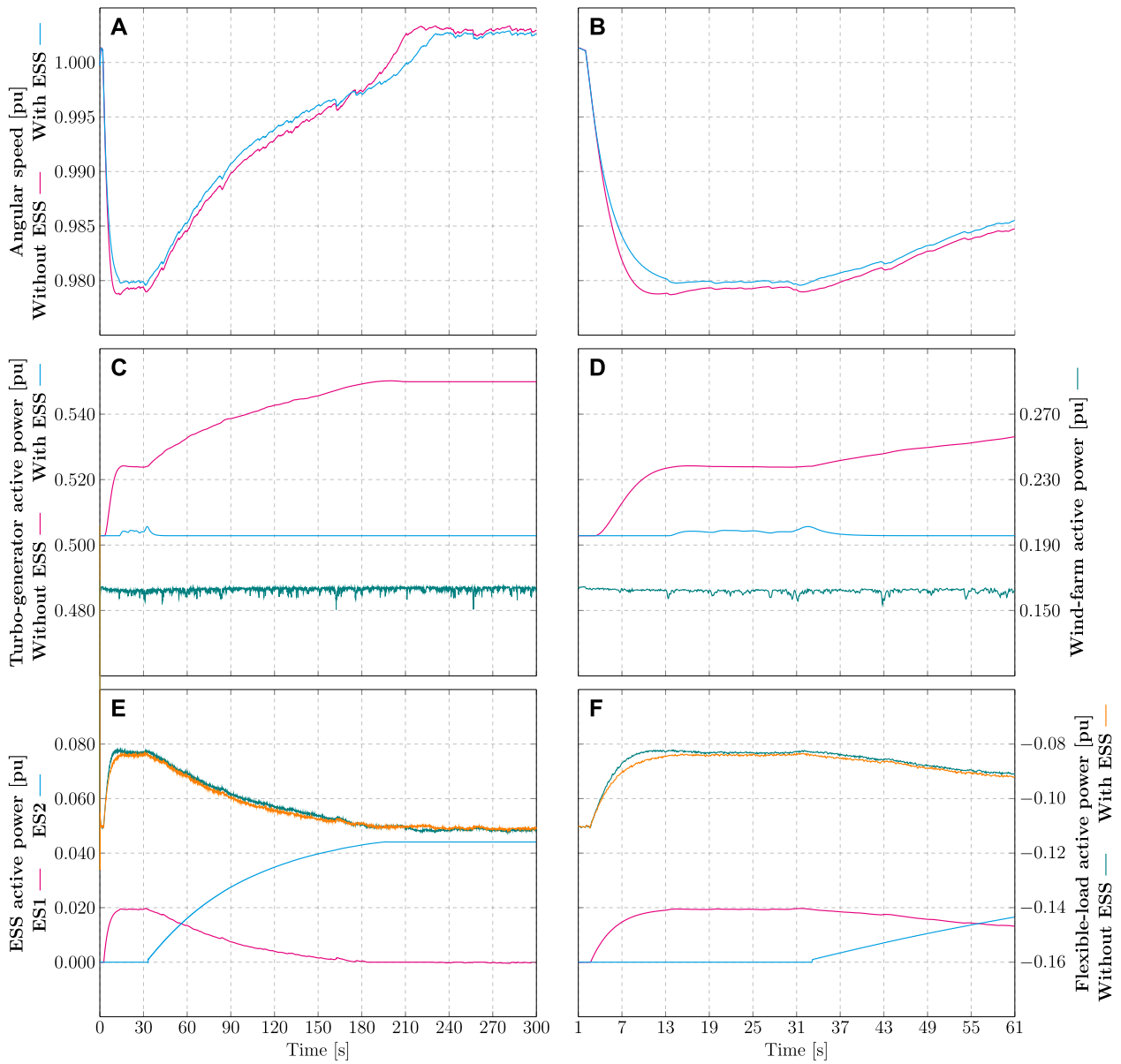

FIGURE 9 | Case study behavior during a load increase of 3 MW with and without the proposed ESS: normalized angular speed **(A)** during the whole transient and **(B)** detail of the first minute; turbo-generator and wind farm active power in pu **(C)** during the whole transient and **(D)** detail of the first minute; active power of the ES devices responsible for primary control (ES1) and secondary control (ES2) **(E)** during the whole transient and **(F)** detail of the first minute.

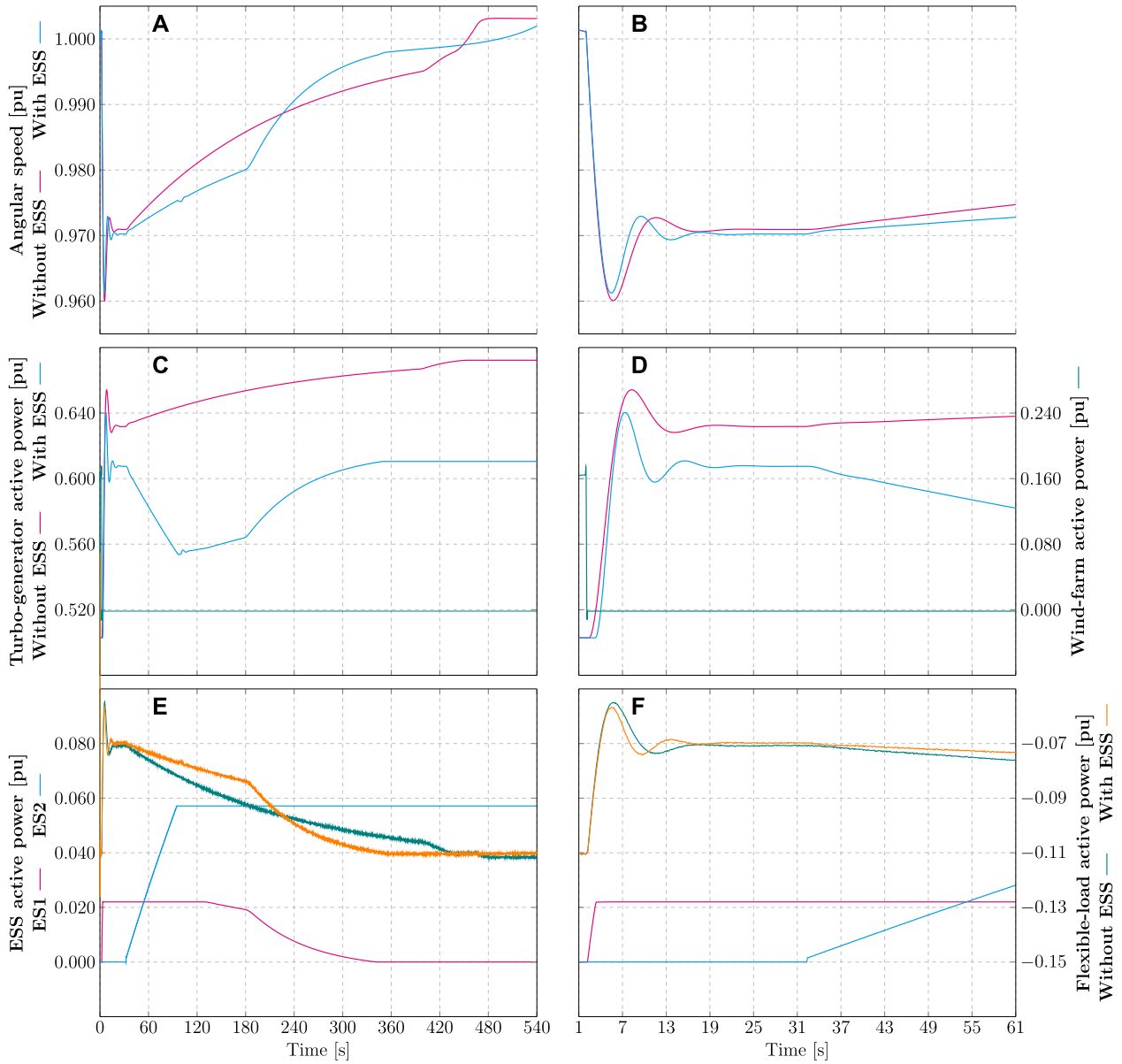

FIGURE 10 | Case study behavior during the wind farm disconnection under full production (12 MW) with and without the proposed ESS: normalized angular speed **(A)** during the whole transient and **(B)** detail of the first minute; turbo-generator and wind farm active power in pu **(C)** during the whole transient and **(D)** detail of the first minute; active power of the ES devices responsible for primary control (ES1) and secondary control (ES2) **(E)** during the whole transient and **(F)** detail of the first minute.

TABLE 1 | Parameters of the ACPS of an offshore oil and gas platform in the Norwegian continental shelf and the requirements for its converter-interfaced ESS.

Param	Value	Param	Value
S_b	70 MW	ω_s	377 rad s^{-1}
r_{tr}	0.05 pu	r_{ss}	0.02 pu
M_{GT}	5.1 s	D_{min}	2.25 pu
D_{flex}	1.09 pu	D_{es}	1.16 pu
P_{ELY}	6 MW	P_{FC}	4 MW
$(t_a - t_0)$	11 s	$(t_b - t_a)$	18 s
$(t_c - t_b)$	120 s		

TABLE 2 | Summary of the ESS parameters obtained using the proposed procedure.

Param	Value	Param	Value
P_{es1}	1.54 MW	E_{es1}	60 kW h
U_{dc}	1500 V	ΔU_{dc}^{max}	150 V
T_r	2.1 ms	ΔP_{dc}^{max}	360.5 kW
P_{losses}^{es1}	25 kW	C_{dc}	1.7 mF
P_{gc}	7.72 MW	S_{gc}	9.65 MVA
U_{2n}	675 V	ΔI_{gca}	0.25 pu
f_{sw}	5.4 kHz	L_{gc}	5.61 μH
L_g	6.92 μH	C_c	2.5 mF
f_{res}	1.80 kHz	R_c	0.189 mΩ