CROSSWIND

TECHNICAL QUERY
Hollandse Kust Noord

No. TQ :	CW-STA-TQ-0007	Rev:	A

Originating Party	Crosswind					
Subject	Interface with BESS					
Author	Stephen Bremner	TQ Aconex unique number:				
Interface TQ - from	Rosetti	TQ interface source Aconex unique number: ROSMA-INN-BPH-TQ-00067				
Type	Query			Interface		
	Deviation		x	Derogation (SHALL[PS])		
	Note: No deviations nor derogations which have an adverse effect on HSSE will be granted					
Workpackage						
Area(s) of application	Design & Eng.	x	Procurement		Construction	
	Commissioning		Operations		Other	
Issue date	13-11-2023		Urgent reply 5 days		Routine reply 10 days	x
Close-out date						
Closed-out by			TQ status:		Closed-out	

1. Description

Reference documents / Aconex unique numbers:

For EMCS functionalities, it is required to monitor and control BESS.

1. Minimum exchange signals to be monitor/control over PROFINET protocol.

The signals listed below as minimum requirements. CPI vendor to advise if any other signals that is critical for operation to be monitored in EMCS.

Signal description	IO type
Grid forming mode	DI
Grid following mode	DI
LV CB closed status	DI
LV CB open status	DI
State of charge (%)	AI
Charging mode command	DO
Charging in progress feedback	DI
Discharing mode command	DO
Discharging in progress feedback	DI

This communication is issued for the recipient's information and to facilitate the obligations of the Parties under the Contract. This communication has no authority to amend or vary the Contract nor relieve either Party of any duties, obligations or responsibilities.

Charge/Discharge setpoint (kW)	AI
P_optimization for charge/discharge (kW)	AI
Batery status (Fault, Preheat, Ready, Operating)	
Battery start command	DO
Battery stop command	DO
Battery terminal voltage	AI
Battery actual charge rate (kW)	AI

Crosswind is kindly required to further investigate and formal reply.

2. Time synchronization protocol: NTP. Crowsswind is kindly required to confirm.

3. Performance: Crosswind is kindly required to specify how fast (ms) BESS can be switched from discharge mode to charge mode and vice versa.

2. Response

Reference documents / Aconex unique numbers

FREQCON/STATRON response :

1. Exchange signals – signals below are consistent with the standard list with exception of Battery stop/start commands. The signal type are the input for EMCS.

Signal description	IO type	Comments
Grid forming mode	DI	OK via PROFINET
Grid following mode	DI	OK via PROFINET
LV CB closed status	DI	OK via PROFINET
LV CB open status	DI	OK via PROFINET
State of charge (%)	AI	OK via PROFINET
Charging mode command	DO	OK via PROFINET
Charging in progress feedback	DI	OK via PROFINET
Discharing mode command	DO	OK via PROFINET
Discharging in progress feedback	DI	OK via PROFINET
Charge/Discharge setpoint (kW)	AI	OK via PROFINET
P_optimization for charge/discharge (kW)	AI	OK via PROFINET
Batery status (Fault, Preheat, Ready, Operating)	AI	OK via PROFINET
Battery start command	DO	Not sure what what the function of the stop/start signals: please provide more details?
Battery stop command	DO	
Battery terminal voltage	AI	OK via PROFINET
Battery actual charge rate (kW)	AI	OK via PROFINET

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Please note : Signal for **charge/discharge power setpoint** is missing in the **list (AO / Profinet). This signal is required for BESS controller for charging/discharging.**

2. Time Exchange synchronization protocol: NTP – Statron/Freqcon confirm this is acceptable.

3. Performance: In Normal operation - BESS switching from discharge to charge is 1 to 5 seconds or faster.

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