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Revision history		
Rev.	**Date.**	**Description**
001	1/20/2023	First Issue
002	2/17/2023	Modified according to comments
003	8/26/2025	Modified according to comments

KBR
ACCEPTANCE
FOR ENGINEERING USE

THIS DOCUMENT IS:

ACCEPTED	(Code 1) ____
ACCEPTED WITH COMMENTS	(Code 2) ____
NOT ACCEPTED	(Code 3) ____
NOT REVIEWED	(Code 4) ____

ACCEPTANCE DOES NOT RELIEVE SUPPLIER FROM FURNISHING MATERIAL IN CONFORMANCE WITH ORDER. REFER TO SDR-1 FOR FULL DEFINITION OF ACCEPTANCE CONDITIONS.

DISCIPLINE _____ BY _____
DATE _____

Document Title:	**BLPH Project - Process Flow Diagrams (PFD) & Heat/Mass Balances**
Document Number:	K559-2254-CWIWP4202202-C02-001
Revision:	Rev003
Sequence Number:	001
File Name:	K559-2254-CWIWP4202202-C02-001Rev003
Purchaser Job:	K559-2254
Purchase Order:	CWIWP4202202
Code:	C02
Requsition Number:	n/a
Customer:	CrossWind C.V., Rotterdam, The Netherlands

BLPH Scope

Ballard Scope

BLPH Scope

=HA01+DA02-XM01
H2 Supply Connection
DN32

0,9 - 29,4 g/s
0-80°C
3,5 - 6,5 barg
Hydrogen

+DA01
40ft ISO Container

<30080 Nm³/h
Ambient temperature (25°C max)
Ambient pressure
Air

6 separate exhausts
<3900 Nm³/h total
50-80°C
<50mbarg
Oxygen depleted, trace hydrogen
Air

6 separate exhausts
720 Nm³/h total
5-45°C
<50mbarg
Air

<24560 Nm³/h
10-45°C
<50mbarg
Air

+DA03
10ft ISO Container

-X09
Ventilation Intake

-X05
Process Air Exhaust

-X06
H2E Ventilation Exhaust

-X08
Container Ventilation Exhaust

-X07
Hydrogen Supply Inlet

20kW
480V@60Hz
400V@50Hz
3P+N+PE

-X11
AUX Power Supply

-TA30
3
3
1200kVA

=HKN70-XB02
6,6kV MV Power

-X01
HT Coolant Loop #1
Inlet

-X04
HT Cooling Loop #1
Outlet

-X02
HT Coolant Loop #2
Inlet

-X03
HT Cooling Loop #2
Outlet

-X12
LT Coolant Loop
Inlet

-X13
LT Cooling Loop
Outlet

-X10
Process Water Drain

=JB01+DA02-HQ01
Process Water Exhaust

<10 Nm³/h
25-65°C
<50mbarg
Ventilation

<100 m³/h
10-40 °C
50/50 Water/Glycol
Coolant

<100 m³/h
10-40 °C
50/50 Water/Glycol
Coolant

<30,0 m³/h
10-40°C
50/50 Water/Glycol
LT Coolant

=HE01+DA02-GP19
15kW
HT1 Coolant Pump

=HE01+DA02-EG01
1050kW, V-type
HT Cooling Tower

=HE02+DA02-GP29
15kW
HT2 Coolant Pump

=HE02+DA02-EG01
1050kW, V-type
HT Cooling Tower

=HE03+DA04-EG01
100kW, V-type
LT Cooling Tower

<13,2 l/min
50-80°C
DI Water
Water

=JB01+DA02-XM01
1" ASME B 16.5
Process Water Drain

=HKN70-XM02
Proess Water Drain

See function and location references in document C03 (P&ID document)

DRAFT

Reference Item Number	Ballard Part # TBD
EPLAN Project Name	601456B - Shell Baseload Power Hub
EPLAN Revision	11
EPLAN Project Pages	628
=	++ | + | & B01

REVISION INFORMATION
DESCRIPTION
DATE
09-Sep-25

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DRAWING	K559-2254-CWIWP4202202-C02-001	REVISION	11
DRAWING TITLE	Crosswind/Shell Baseload Power Hub, Fuel Cell Container 1MW, no BESS		
SHEET TYPE/DESC	Process Flow Diagram		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 1 / 1

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