

October 8, 2024

The Secretary, Listing Department, BSE Limited, 1<sup>st</sup> Floor, Phiroze Jeejeebhoy Towers, Dalal Street, Mumbai - 400 001 Scrip Code: 543187 The Manager, Listing Department, National Stock Exchange of India Limited, 'Exchange Plaza', 5<sup>th</sup> Floor, Plot No. C/1, G Block, Bandra Kurla Complex, Bandra (East), Mumbai - 400 051 Scrip Symbol: POWERINDIA

Dear Sir / Madam,

#### Subject: Analysts/Investors' Presentation

Pursuant to Regulation 30 of SEBI (Listing Obligations and Disclosure Requirements) Regulations, 2015, we are enclosing herewith a copy of Presentation to be made during the Analyst Meet at Energy Digital World 75 (EDW75) – our flagship experiential technology event as scheduled today i.e., October 8, 2024, for the information of the Stock Exchanges.

The above information is also hosted on the website of the Company at https://www.hitachienergy.com/in/en/investor-relations.

Kindly take the same on your records.

Thank you,

Yours faithfully,

For Hitachi Energy India Limited

Poovanna Ammatanda General Counsel and Company Secretary

Encl.: as above

#### Hitachi Energy India Limited

Registered and Corporate Office: 8<sup>th</sup> Floor, Brigade Opus, 70/401, Kodigehalli Main Road, Bengaluru – 560 092, Phone: 080 68473700 CIN: L31904KA2019PLC121597 www.hitachienergy.com/in





## **Energy & Digital World 75**

Advancing energy transition for India's net zero journey N Venu, MD & CEO, India and South Asia



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# 75 years of powering in India; "Making in India" for India and the world



## Hitachi Energy in India today

>2,500^ employees & **19** manufacturing units

Enabling **7\* HVDC** links of the nation's 15

\*Including Mumbai Infeed

# HITACHI **Inspire the Next**



India Operations Center for Power Grids Business launched in Chennai

2007

Energized the world's highest

rated 1,200kV

transformer 2016

First digital substation for reliable, round the clock power to serve the 350 companies for India's largest Information Technology park

### 2017

Booked first order for cybersecurity from POWERG RID

Power

Grids

business

Hitachi

from ABB

2020 2019

Name change from ABB Power Products and Systems India Limited to "Hitachi Energy India Limited" thus Hitachi Energy is formed

## 2015

Installed end-to-end power solution for Delhi Metro, and SCADA to monitor and control the power network



## 2017

Commissioned the world's first multiterminal UHVDC link - the 6,000MW, 800kV DC link connecting North-East India to Agra



#### 2019 **ABB** Power

2018

Indian

Partnering

Railways'

ambitions

traction equipment

orders

electrification

with extensive

Products & Systems India Ltd incorporated

## 2020

Listed on the National Stock Exchange and BSE

in 2023



Powering **50%** of Indian Rail, 90% of metro rail

Connecting 61GW of renewable energy

25% of orders towards global energy projects



## Nations to come together to avoid tipping point





Global energy-related CO<sub>2</sub> emissions grew by 1.1% in 2023 to reach a new record high of 37.4 billion tonnes

India accounts for 18% of the world population, but to date contributed 5% of emissions.

With changing weather patterns, energy emissions have risen in the past year



## Energy Mix evolution as per India Energy Security Scenario (IESS)\*

Growing Energy Demand: India's per-capita primary energy consumption will likely double from 7,017 kWh in 2022 to 12,547-13,477 kWh by 2047.

**Doubling of Demand Electrification:** is expected to more than double by 2047 and reach 40% from current levels of 19%. The electricity sector, which accounts for almost 40% of total greenhouse gases (GHGs), is critical for India to decarbonize.

Increase in Non-Fossil Capacity: India's installed capacity of nonfossil is expected to increase from 43.7% to 61%-65% by 2030 and 85%-90% by 2047.

National ambitions for 2030



**500 GW** renewable energy capacity



500 GW ISTS to evacuate renewables



30% **EV** penetration

100% 圓 rail electrification



1 mn ton of annual green hydrogen production





\*Niti Ayaog IESS, energy mix until 2047 under Business as Usual (BAU) and Net Zero scenarios

## The renewable energy revolution is happening now



Annual installation rate of around 50GW is imperative

1 GW offshore wind energy projects in Gujarat & Tamil Nadu approved by Union Cabinet

Moody's Ratings estimate India to spend up to 385 BUSD (3.2 lac crore) to meet renewable energy target

India must accelerate its efforts, requiring >2.5X the installation compared to the previous fiscal year (18 GW)

Hitachi Energy addressable market expected to grow ~2.5X as renewable addition ramp up

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https://www.financialexpress.com/business/industry-moodys-estimates-up-to-385-billion-investment-to-meet-renewable energy-target-3517233/ National Electricity Plan 2032 lays clear path to improve India's power and transmission infrastructure and support renewable integration





Hitachi Energy is well positioned to cater the coming growth in power & infra space with its investments in CAPEX and people

## Decarbonization of industries, transport & infrastructure



Peak power demand expected to nearly double by 2032

#### Datacenter and Transport to drive power demand growth



India has a potential for 5X data center capacity expansion to fuel digital transformation and the country requires an additional 1.7-3.6 GW data center capacity

Electric vehicle (EV) market penetration estimate for India target of 30% by 2030 100k EV Chargers needed by 2030

National Rail Plan 2030 – 4500 Vande Bharat Trains by 2047 Investments in High& Semi – High Speed Rail and Metro

7

Source: Deloitte | https://energy.economictimes.indiatimes.com/news/power/india-leads-emerging-asias-ev-revolution-1-3-trillion-investment-opportunity-by-2030-report/113539917?utm\_source=top\_story&utm\_medium=homepage|





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## Harnessing an installed base of +10BUSD



The energy transition needs **technologies**, **services and partnerships** 

Technology implementation Business models Policies and regulatory framework Demonstrators and pilots Research Talents and investments



**Digitalized Classic Services** 

**Advanced Services** 

#### **Servitized Solutions**



## Making in India for India & the world



Chennai HVDC factory – supplying to Mumbai cityinfeed and Marinus link in Australia Greenfield Power Quality factory in Bengaluru -Doubling manufacturing capacity

**Direct exports & EPCs** 

**Global feeder factories** 

Via global Hitachi Energy

#### 25% of overall orders

## Investing in India's journey to net zero





#### Hitachi Energy India has invested >INR 350crore since 2020, including:

- Power quality factory in Bangalore
- HVDC and PQ factory in Chennai
- GIS feeder factory in Savli
- Dry-bushing factory in Vadodara

#### Hitachi Energy India Limited plans to invest ~INR 2,000 crores over the next four to five years to add capacities of

- Large and Small Power Transformers
- Dry and Traction Transformers
- HVDC & components
- Network control solutions offering

Along with development & manufacturing of localised Grid eXpand<sup>™</sup> and Grid eMotion<sup>®</sup>

## What is Energy & Digital World 75?





### **Immersive showcase**

**1,000** sqm of exhibition

**40** portfolio exhibits in 25 technology areas

**5** products for the first time in India

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**Technical conferences** 

60

global technology experts & innovators

**27** technical deep dives along three tracks

6 policy and thought leadership panel discussions いび People in energy

2,000

000

customers, policy makers, suppliers, academia, think tanks, regulators, diplomats

**30** nationalities

**300** members of academia

### Advancing energy transition for India's net-zero journey



## Showcasing for the first time in India

Grid-enSure<sup>™</sup> is a fully integrated portfolio that comprises Hitachi Energy's top end solutions, present and future, based on Power Electronics and Advanced Control Systems SAM600 3.0: One-device merging unit and switchgear control unit

Relion REF650 delivers advanced protection and control for power distribution applications

EconiQ: World's first SF6 free 420-kilovolt gas-insulated switchgear system

EconiQ

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#### Hitachi Energy

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## Hitachi Energy 2030: Purpose-driven growth





Hitachi Energy 2030 - our commitment to advancing a sustainable energy future for all, delivering social, environmental and economic value, aligned with Hitachi's vision and goals

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# Energy and Digital World (EDW75)

Oct 7-8, Taj Palace, New Delhi

**#75yrsPoweringIndia #EDW75** 



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## Evolving energy landscape and technologies for tomorrow

Gerhard Salge, CTO, Hitachi Energy



Electrification in India and globally will be growing like never before







#### Economic growth and carbon emission reduction are key drivers of electrification in India

## The Power System Evolution – Future Power Systems



1. High-Voltage Direct Current 2. Medium-Voltage Direct Current 3. Low-Voltage Direct Current 4. Alternating Current

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## **Transitioning Power System landscape**



	Normal operation Operation under			Normal operation	Operation under disturbance of	
L years months weeks days hours minutes		disturbance	L years months weeks days hours minutes	Flexib	high probability	low probability Resilience
seconds	Reliability	Stability	seconds			

While reliability and stability remain foundational principles of Power System operation, the evolving requirements have necessitated a broader focus that includes flexibility and resilience

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Evolution of Germany's residual load profile



Projected residual demand (2030)

#### Internal





#### Flexibility levers need to be balanced for most effective power system utilization

Grid-enSure<sup>™</sup> is a fully integrated portfolio that comprises Hitachi Energy's top end solutions based on Power Electronics and advanced Control systems. Designed to enhance the flexibility, resilience and stability of the grid

Advisory services	Semiconductors	(Enhanced) STATCOM	HVDC	Energy Storage
Extensive grid modernization consulting expertise	<ul> <li>+20% Current with same footprint</li> <li></li></ul>	<ul><li>Woltage control</li><li>Additional inertia – frequency stability</li></ul>	<ul> <li>Grid forming control</li> <li>Freq. and AC voltage control</li> <li>Ultra-compact</li> </ul>	<ul> <li>Boost the integration of Renewables</li> <li>Fast frequency and primary freq. support</li> </ul>
Urban area powered by 100% wind & solar	New generation semiconductors	TransnetBW (Germany)	Mumbai city infeed (India)	Waratah Super Battery (Australia)





#### Step 1 Make it digital

From analog to digital as critical foundation



#### Step 2 Run the grid in realtime

Future-proof network management for reliability and flexibility



#### Step 3 Turn data into insights

Advanced decisionmaking requires advanced applications



#### Step 4 Drive actions with data

Connected assets and operations enable the right tool for the right job at the right time

We can meet any customer's requirement on their digital transformation journey

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**Leading** digitalization solutions from edge to enterprise



Sustainable products and solutions deliver total life-cycle optimization

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## Fast adoption of $SF_6$ -free equipment – Becoming the new norm



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## Summary



- 1. Global Power System of 2050 much bigger and more complex
- 2. Indian Power System is evolving in the same way as all other large grids worldwide much more flexibility required
- 3. Hitachi Energy India has the technology, the global experience and the competences to enable a future fit Transmission and Distribution system – at scale!
- 4. Hitachi Energy India is crucial for the global Hitachi Energy business, across technology development, engineering, manufacturing and many further contributions





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