HYUNDAI ENGINEERING CO., LTD.

Prospect and Progress of SMART Business

Strategic movement towards net-zero Canada

May 8th, 2024
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Hyundai Engineering Co., Ltd.

Contents

1 Strategy

Two Track Strategy

Demonstration of the FOAK project in Ontario + Marketing for the NOAK project in Alberta
When the FOAK project in Ontario becomes visible, immediately convert to commercialization of the NOAK project in Alberta, Ontario and worldwide.

FOAK — SMART — NOAK

Power in Ontario

Chalk River Site
110MWe (1 Unit) / Electricity
By 2031

Steam in Alberta

Oil Sands Area
More 730MWth (Min. 2 Units) / Steam
By 2035

Power/Steam in Ontario

Chalk River Site / Off-grid Area
Min. 2 Units / Electricity + Steam(Option)
By 2040 ~ 2050

2 Opportunities (in Alberta)

Multiple solutions : CCS + SMART

~2035

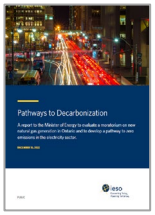
Reduce CO_2 from oilsands operations by 22m tonnes annually

CCS

2035~2050

Sustainable and clean Carbon capture technology

SMART



Carbon Tax

- Continues rising by $15/tonne from 2030–2035, and thereafter increases with the rate of inflation (IESO report)[1)]

Heat Demand in Oilsands

- Clean heat requirements are expected to be 4 times larger than the power

SMART technologies for oilsands

- Design suitable for the steam on SAGD steam process

1) IESO's Pathways to Decarbonization (2022)

2. PROGRESS

1 Footprints

	ALBERTA	ONTARIO
2021	✓ MOU(HEC-KAERI-Gyeonsangbukdo-Alberta)	
2022	✓ Meeting with former Premier Jason Kenney ✓ Workshop on Alberta Oil Sands - HEC, KAERI, KHNP, Stantec ✓ MOU for Alberta SMART (HEC-KAERI-KHNP)	
2023	✓ Global Energy Show in Calgary ✓ SMART FS Proposal for Alberta Province	✓ AECL's CEO Fred Dermarkar's Proposal for SMR FOAK Deployment at CNL Site ✓ SMART Development NDA (CNL-HEC-KAERI) ✓ MOU for SMART Cooperation (AECL-KAERI) ✓ **CNL Site Invitation Process (Phase 1&2) Submission**
2024	✓ (Feb) Pathways Alliance RFI NDA ✓ (May) Pathways Alliance RFI Submission ✓ (Dec) KAERI-Alberta Innovates SMART FS in Oil Sands	✓ (Feb) CNL Invitation Process Evaluation Result MOU with PCL/HATCH ✓ (May) Service Agreement with CNSC ✓ (Jun) CNSC VDR Phase 1 Submission Complete CNL Invitation Process (Phase 1&2) Incorporation of Joint Venture (JV)

2. PROGRESS

2 Cooperation between Korea-Canada

With Government

2022

Team Korea MoU

HEC-KHNP-KAERI MoU on Alberta SMART project

2023

High level Discussion, MOU

Former Premier's visit to KAERI

MOU between KAERI and Government of Alberta

2024

Oilsands industries

Workshop

Team Korea with Canadian consulting firm(Stantec, Nobilus Energy)

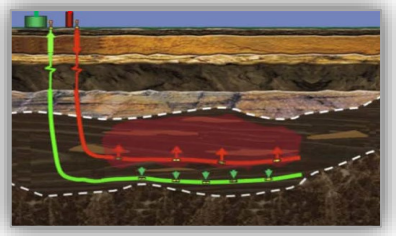
Stantec NCG Nobilis Consulting Group

KHNP HYUNDAI ENGINEERING CO., LTD.

KAERI Korea Atomic Energy Research Institute

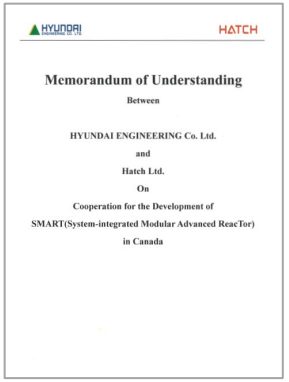
Pathways Alliance RFI

SMART application on SAGD process



Other Stakeholders

MOU with HATCH & PCL



HYUNDAI HATCH

Memorandum of Understanding

Between

HYUNDAI ENGINEERING Co. Ltd.

and

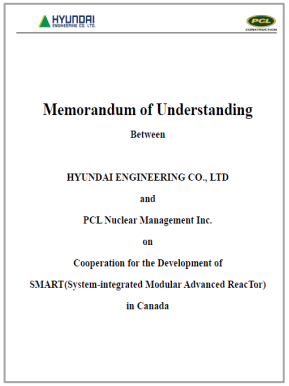
Hatch Ltd.

On

Cooperation for the Development of

SMART(System-integrated Modular Advanced ReacTor)

in Canada



HYUNDAI PCL

Memorandum of Understanding

Between

HYUNDAI ENGINEERING CO., LTD

and

PCL Nuclear Management Inc.

on

Cooperation for the Development of

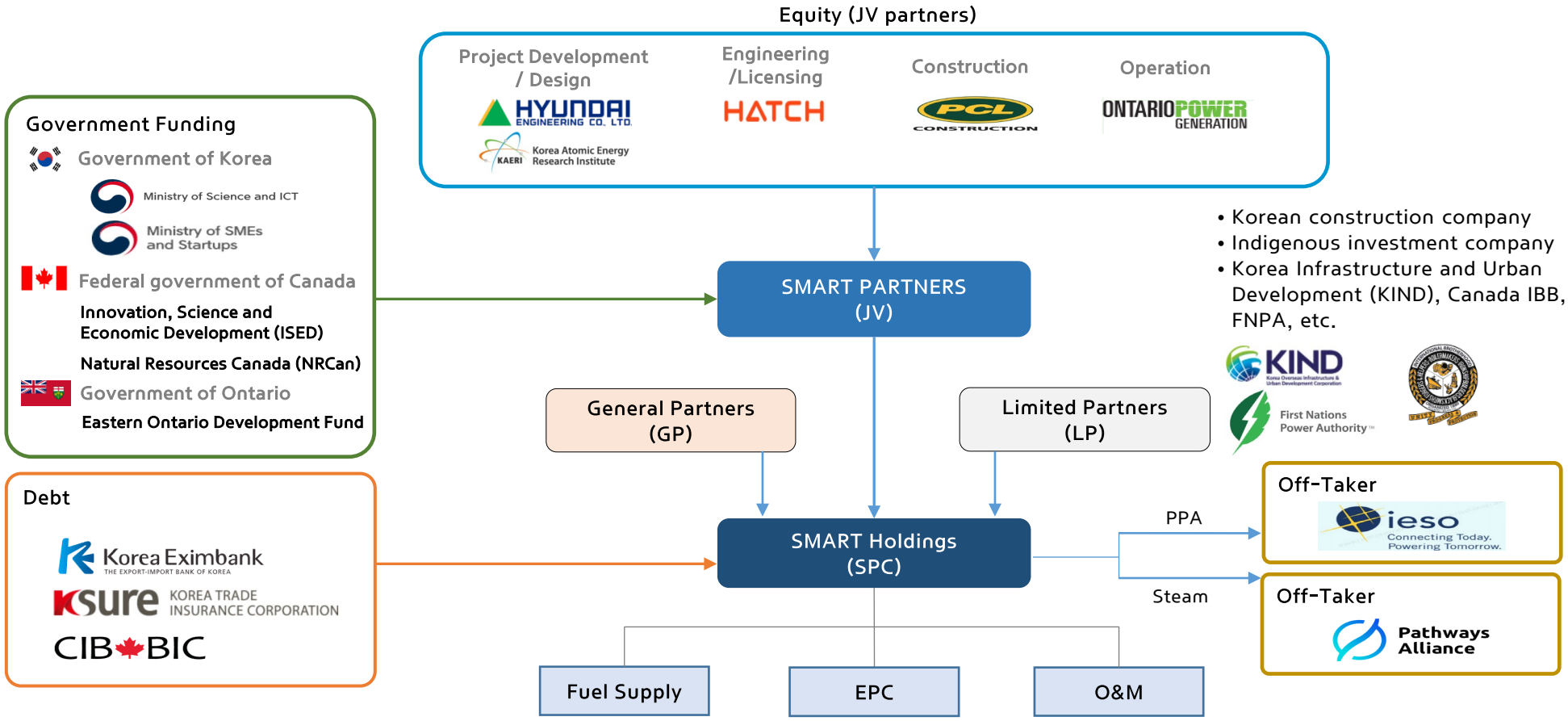
SMART(System-integrated Modular Advanced ReacTor)

in Canada

FS study with Alberta Innovates

3. PLAN

1 Possible Project Structure

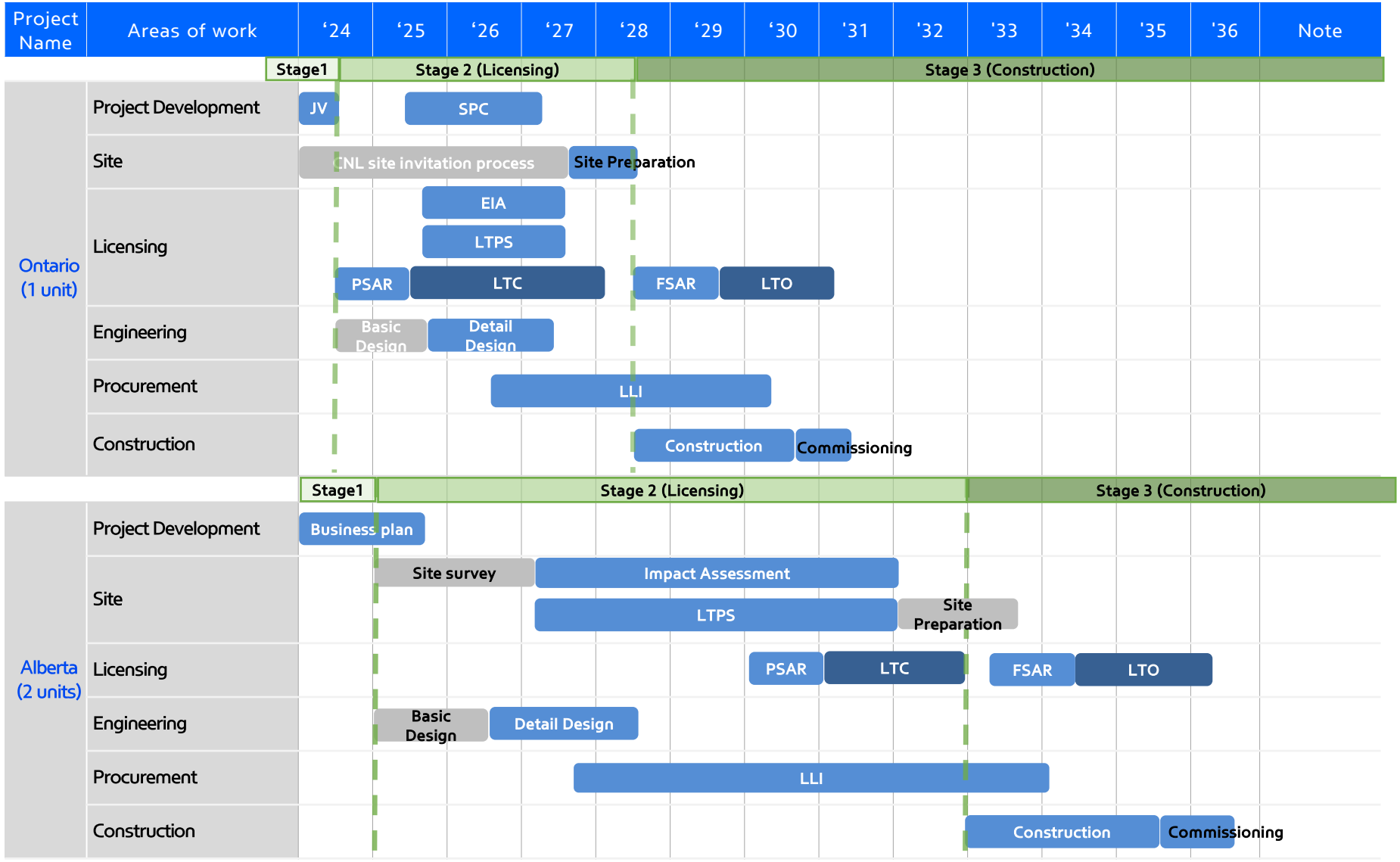


1) NOTE : The companies in this slide are interested in SMART project in Canada, but do not make the final decision to join the project

CIB : Canada Infrastructure Bank
IBB : International Brotherhood of Boilermakers

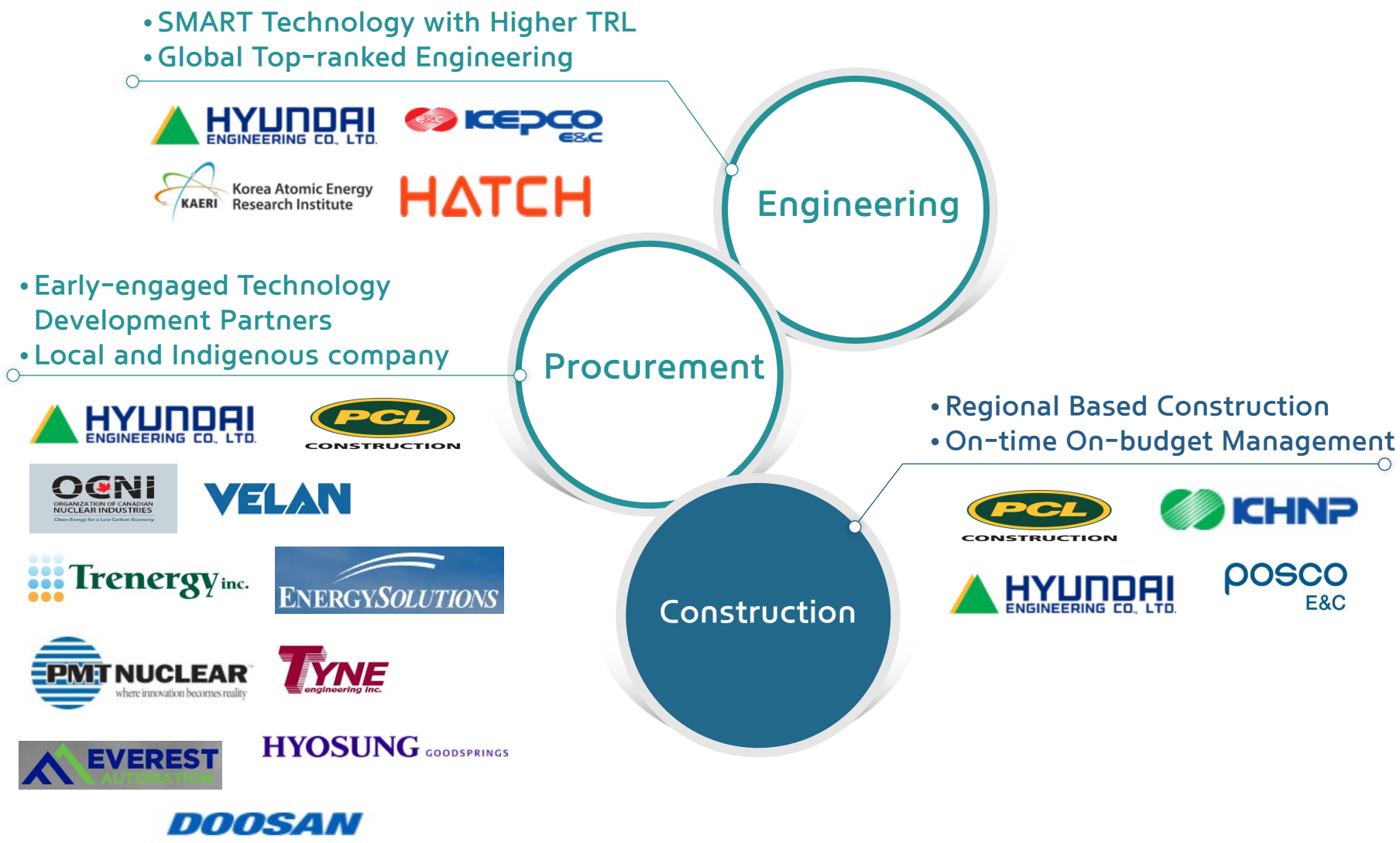
3. PLAN

2 Expected Project Schedule



3. PLAN

3 Collaboration of Supply Chain with Local Company



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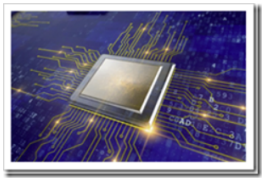
4. TO THE WORLD

1 Supply of Carbon-free Power to the World

The future of the Nuclear-Powered Datacentre is near

OpenAI CEO Altman Says Future of AI Depends on an Energy Breakthrough

Posted on February 4, 2024 by djysrv



OpenAI's CEO Sam Altman said at a forum held at the Davos conference in Switzerland that an energy breakthrough is necessary for future artificial intelligence.

It is needed, he said, because the semiconductors that process AI applications consume enormous amounts of electrical power. Altman said the power requirements for the semiconductors that run AI software applications are much greater than he expected.

OpenAI's Altman Sees UAE as World's AI Regulatory Testing Ground

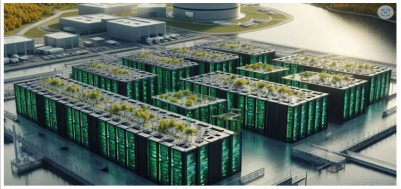
- Altman calls for 'contained' experiments before regulation
- He says Mideast country could lead talks on global AI rules

Sam Altman *Photographer: Dustin Chambers/Bloomberg*

White Paper / SMRs Can Back Up Data Centres' Role As Cornerstone Of 'Fourth Industrial Revolution'

By Rumyana Vakarelska
7 March 2024

Reduced footprint and safety features make co-location possible, but 'first-of-a-kind' challenges remain



Using small modular reactors to power data centres could work as early as the beginning of the 2030s, the white paper says. Courtesy Tractebel.

Microsoft trains generative AI to handle SMR nuclear regulatory process

Working with Terra Praxis as it looks for ways to power its growing data center fleet

December 18, 2023 By: Sebastian Moss Have your say

Microsoft has spent the last six months working on a generative AI model for nuclear regulatory and licensing processes.

In recent months a lot of attention has been given to the concept of using small modular reactors (SMRs) to provide reliable 24 X7 conditioned power to the many large data centers that power cloud computing including all aspects of the Internet.

Google, Amazon, and Microsoft, among others, own and operate hundreds of data centers connected globally to manage customer information. Each of these data centers use large amounts of electricity which makes them obvious platforms for decarbonization of their sources of power.

SMART is not a paper SMR but is the immediately deployable SMR to provide off-grid power for Datacenter.

ANY QUESTIONS?

Thank you for your time and cooperation