

The World Forum for Energy Transformation

ÖGEW / DGMK Autumn Event 2025

Security of supply through energy storage technologies

20-21 November, Vienna



2017

The World Forum for Energy Transformation



WPC (World Petroleum Council)

WPC Energy

WPC Energy – The World Forum for Energy Transformation

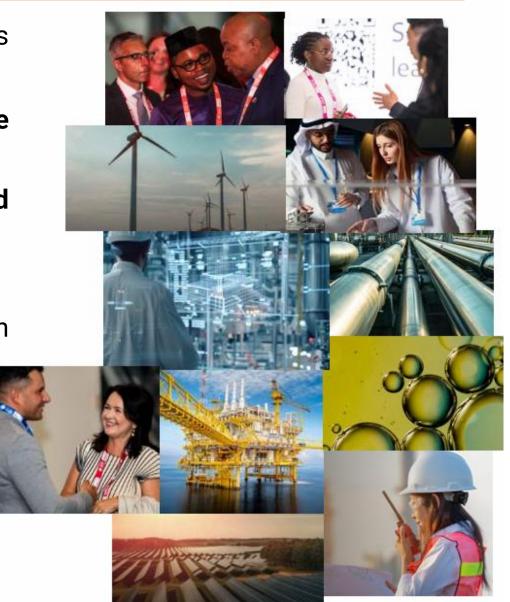
Promotes sustainable management & use of the world's energy resources for the benefit of all

Facilitates dialogue among stakeholders across the energy system

Champions a realistic understanding of what is required for an effective energy transformation

 Non-advocacy, non-political, UN Accredited NGO with charitable status in the UK

- Not for profit
 all surpluses are dedicated to legacy projects
- 60 National Committees
 >96% of consumers & producers



WPC Energy - Collaboration

We are proud to cooperate closely with a wide range of stakeholders across the energy sector























































8th WPC Energy Youth Forum, 22-23 October 2025, Kuwait



Empowering the Future: Connecting Young Professionals, Ideas & Knowledge



25th WPC Energy Congress – 26-30 April, Riyadh

25th WPC Energy Congress in Numbers

50,000

25,000

1,000

Attendees

Companies

500

sqm Exhibition

100

Ministers

800

Speakers



Congress Experience

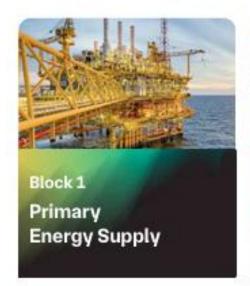


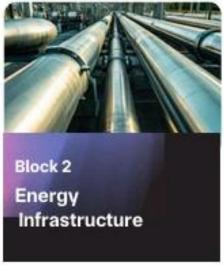
Pathways to an Energy Future for All

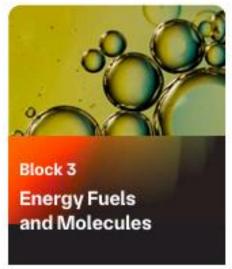


Technical Programme

Future Pathways to











Synergy Pavillion

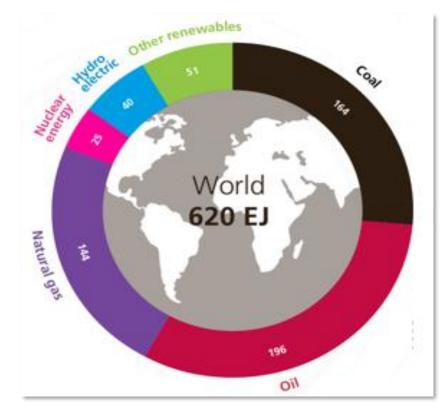
Young Professionals, Women in Industry, Circular Carbon Economy, Social Responsibility



Global Energy Security in a Transforming Landscape

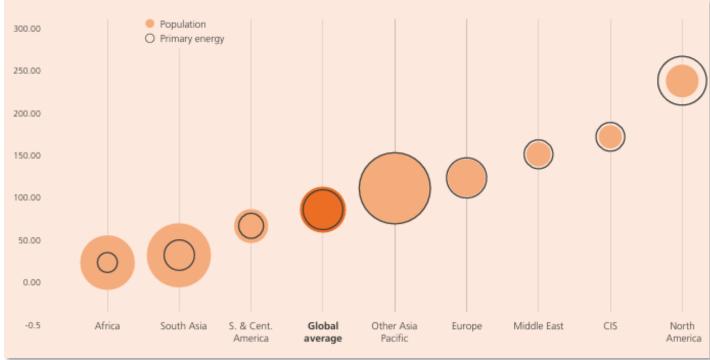
Burcu Gunal
Director General
WPC Energy

Global Energy Mix



2024 Oil consumption: 103.75 mb/d Gas consumption: 4.2 tcm

Primary Energy Consumption/Population (GJ/person)

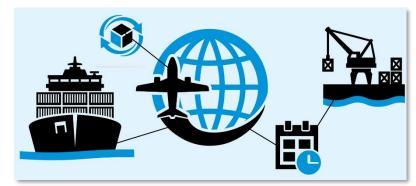


Increasing trend - energy demand new record for the 2nd consecutive year

Global challenges



• Growing new energy generation – not fast enough to meet demand growth



Supply chains disruptions

(Supply/demand, lack of investments, storage capacity, HR)



 Climate goals – decarbonisation & Net O



Volatility in pricing,

Trade concerns



Geopolitical instability



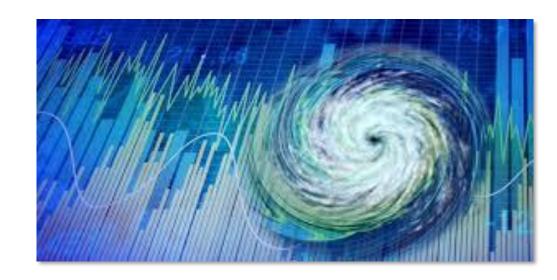
• AI & Digitalisation



Global Energy Security in a Transforming Energy Landscape

• The world's energy system:

Transition & Turbulence



Urgent, complex, interconnected

- New technologies are entering the system at speed
- Renewables set new records for deployment in 2024
- Oil, natural gas & coal consumption, and nuclear output, reached record highs
- Since 2019 demand for coal has grown 50% faster than the next fastest growing fossil fuel, natural gas, a key reason why energy-related emissions have continued to grow.

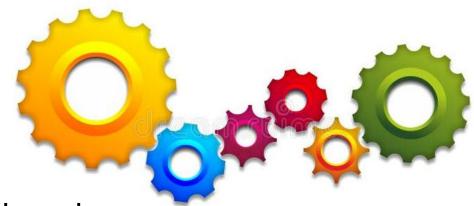
IEA

Energy Security

- Stable access to reliable and affordable energy
- Resilience to shocks whether they're geopolitical, environmental, or technological
- Flexibility in supply chains
- Alignment with sustainability goals
- Ability to integrate renewable resources without compromising reliability
- Flexibility to handle extreme variability.

Rebalancing act:

- traditional and new sources of energy
- national interests and global cooperation
- short-term needs and long-term climate commitments.



The Changing Energy Landscape

Profound transformation

Shift toward low-carbon technologies

- Oil and gas continue to play a critical role in global supply
 What's changing is the context: expectations around emissions, social license to operate & integration with new systems
- Storage technologies, digitalization & decentralised systems

Emerging as key enablers energy access & resilience.

Renewables expand rapidly

Defining feature of today's energy landscape:

Coexistence of Traditional and New Systems



Energy Storage

- Renewable penetration alone does not guarantee stability
- Storage: backbone of energy systems
- Without storage, the decarbonisation timeline is slowed, costs rise, and resilience falls
- Storage links demand supply, and volatility reliability
- As energy systems become more interconnected, so too must our policy and planning frameworks.
- Short-term reliability and long-term planning
- It changes how we build networks, invest & what kind of shocks we can withstand
- The decades ahead will demand coordination between policy, finance, & technology more than ever







Global Energy Storage Market (2025–2040)

- 1. Explosive Growth & Scale-Up
- 2. Diversifying Demand & Emerging Markets
- 3. Technological Innovation & Cost Pressure





5 Strategic Implications for Energy Security

- 1. Storage becomes the central pillar of energy security
- 2. Countries must diversify storage portfolios, not chase a single technology
- 3. New storage demand centres will reshape global energy geopolitics
- 4. Innovation and digitalisation become critical security tools
- 5. Policy must shift from "supporting storage" to "planning storage"



A Call for Strategic Balance

- Global energy security today is about integrating, adapting and managing risk, while enabling innovation, and delivering reliability alongside sustainability, across a diverse energy ecosystem.
- Systems that are not only efficient, but equitable and enduring. That will require balanced strategies, smart investments, and global cooperation.
 - Energy security depends on:

Cross-Border Collaboration, Transparent Markets, and Knowledge Sharing





Conclusion

- A stable and reliable energy system is the foundation for any successful transformation.
- No one-size-fits-all
- Era of energy addition
- Energy security in a transforming world depends on our ability to store energy reliably, flexibly, and at scale.

Storage is no longer a supporting technology.

Whether through batteries, thermal storage,
pumped hydro, hydrogen, or new long-duration systems,
storage gives countries the flexibility to manage
volatility, integrate new energies, and ensure
uninterrupted energy for homes, industries,
and critical infrastructure.





The World Forum for Energy Transformation

Thank you