

AI at Shell Making Energy Smarter

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Definitions & cautionary note

Cautionary Note

The companies in which Shell plc directly and indirectly owns investments are separate legal entities. In this **presentation**, “Shell”, “Shell Group” and “Group” are sometimes used for convenience where references are made to Shell plc and its subsidiaries in general. Likewise, the words “we”, “us” and “our” are also used to refer to Shell plc and its subsidiaries in general or to those who work for them. These terms are also used where no useful purpose is served by identifying the particular entity or entities. “Subsidiaries”, “Shell subsidiaries” and “Shell companies” as used in this **presentation** refer to entities over which Shell plc either directly or indirectly has control. Entities and unincorporated arrangements over which Shell has joint control are generally referred to as “joint ventures” and “joint operations”, respectively. “Joint ventures” and “joint operations” are collectively referred to as “joint arrangements”. Entities over which Shell has significant influence but neither control nor joint control are referred to as “associates”. The term “Shell interest” is used for convenience to indicate the direct and/or indirect ownership interest held by Shell in an entity or unincorporated joint arrangement, after exclusion of all third-party interest.

Forward-Looking Statements

This **presentation** contains forward-looking statements (within the meaning of the U.S. Private Securities Litigation Reform Act of 1995) concerning the financial condition, results of operations and businesses of Shell. All statements other than statements of historical fact are, or may be deemed to be, forward-looking statements. Forward-looking statements are statements of future expectations that are based on management’s current expectations and assumptions and involve known and unknown risks and uncertainties that could cause actual results, performance or events to differ materially from those expressed or implied in these statements. Forward-looking statements include, among other things, statements concerning the potential exposure of Shell to market risks and statements expressing management’s expectations, beliefs, estimates, forecasts, projections and assumptions. These forward-looking statements are identified by their use of terms and phrases such as “aim”, “ambition”, “anticipate”, “believe”, “could”, “estimate”, “expect”, “goals”, “intend”, “may”, “milestones”, “objectives”, “outlook”, “plan”, “probably”, “project”, “risks”, “schedule”, “seek”, “should”, “target”, “will” and similar terms and phrases. There are a number of factors that could affect the future operations of Shell and could cause those results to differ materially from those expressed in the forward-looking statements included in this **[report]**, including (without limitation): (a) price fluctuations in crude oil and natural gas; (b) changes in demand for Shell’s products; (c) currency fluctuations; (d) drilling and production results; (e) reserves estimates; (f) loss of market share and industry competition; (g) environmental and physical risks; (h) risks associated with the identification of suitable potential acquisition properties and targets, and successful negotiation and completion of such transactions; (i) the risk of doing business in developing countries and countries subject to international sanctions; (j) legislative, judicial, fiscal and regulatory developments including regulatory measures addressing climate change; (k) economic and financial market conditions in various countries and regions; (l) political risks, including the risks of expropriation and renegotiation of the terms of contracts with governmental entities, delays or advancements in the approval of projects and delays in the reimbursement for shared costs; (m) risks associated with the impact of pandemics, such as the COVID-19 (coronavirus) outbreak; and (n) changes in trading conditions. No assurance is provided that future dividend payments will match or exceed previous dividend payments. All forward-looking statements contained in this **presentation**, are expressly qualified in their entirety by the cautionary statements contained or referred to in this section. Readers should not place undue reliance on forward-looking statements. Additional risk factors that may affect future results are contained in Shell plc’s Form 20-F for the year ended December 31, 2021 (available at www.shell.com/investor and www.sec.gov). These risk factors also expressly qualify all forward-looking statements contained in this **[report]** and should be considered by the reader. Each forward-looking statement speaks only as of the date of this **presentation**, as of **October 06, 2022**. Neither Shell plc nor any of its subsidiaries undertake any obligation to publicly update or revise any forward-looking statement as a result of new information, future events or other information. In light of these risks, results could differ materially from those stated, implied or inferred from the forward-looking statements contained in this **presentation**.

Shell’s net carbon footprint

Also, in this **presentation** we may refer to Shell’s “Net Carbon Footprint” or “Net Carbon Intensity”, which include Shell’s carbon emissions from the production of our energy products, our suppliers’ carbon emissions in supplying energy for that production and our customers’ carbon emissions associated with their use of the energy products we sell. Shell only controls its own emissions. The use of the term Shell’s “Net Carbon Footprint” or “Net Carbon Intensity” are for convenience only and not intended to suggest these emissions are those of Shell plc or its subsidiaries.

Shell’s net-Zero Emissions Target

Shell’s operating plan, outlook and budgets are forecasted for a ten-year period and are updated every year. They reflect the current economic environment and what we can reasonably expect to see over the next ten years. Accordingly, they reflect our Scope 1, Scope 2 and Net Carbon Footprint (NCF) targets over the next ten years. However, Shell’s operating plans cannot reflect our 2050 net-zero emissions target and 2035 NCF target, as these targets are currently outside our planning period. In the future, as society moves towards net-zero emissions, we expect Shell’s operating plans to reflect this movement. However, if society is not net zero in 2050, as of today, there would be significant risk that Shell may not meet this target.

Forward Looking Non-GAAP measures

This **presentation** may contain certain forward-looking non-GAAP measures such as **[cash capital expenditure]** and **[divestments]**. We are unable to provide a reconciliation of these forward-looking Non-GAAP measures to the most comparable GAAP financial measures because certain information needed to reconcile those Non-GAAP measures to the most comparable GAAP financial measures is dependent on future events some of which are outside the control of Shell, such as oil and gas prices, interest rates and exchange rates. Moreover, estimating such GAAP measures with the required precision necessary to provide a meaningful reconciliation is extremely difficult and could not be accomplished without unreasonable effort. Non-GAAP measures in respect of future periods which cannot be reconciled to the most comparable GAAP financial measure are calculated in a manner which is consistent with the accounting policies applied in Shell plc’s consolidated financial statements.

The contents of websites referred to in this **presentation** do not form part of this **presentation**.

TWO FORCES RESHAPING THE ENERGY SYSTEM






GENERATING
**SHAREHOLDER
VALUE**




ACHIEVING
**NET-ZERO
EMISSIONS**

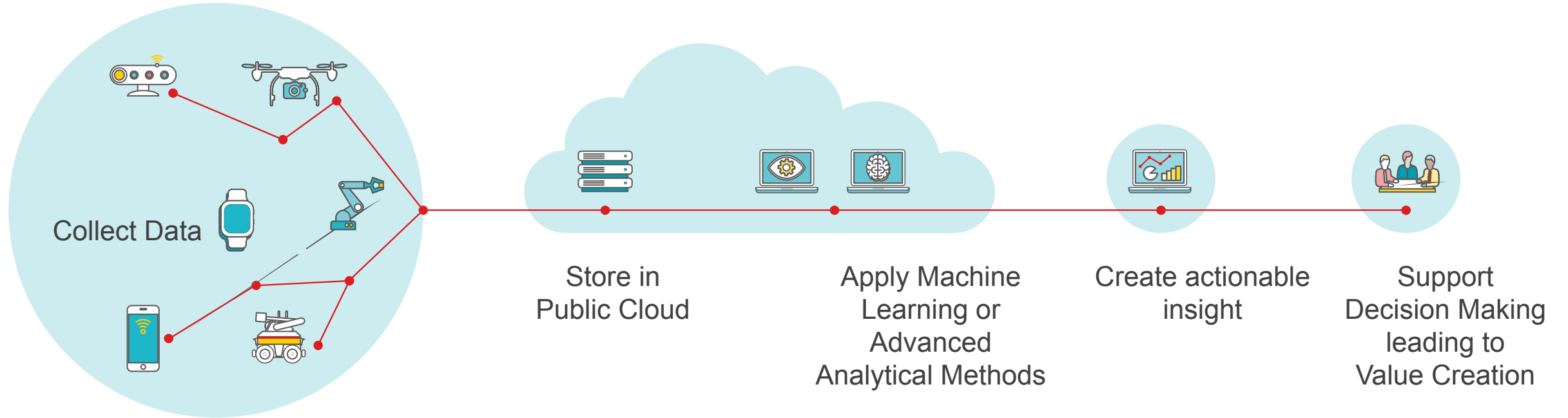



POWERING
LIVES




RESPECTING
NATURE

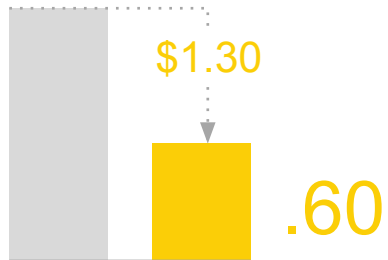
AI is all about data



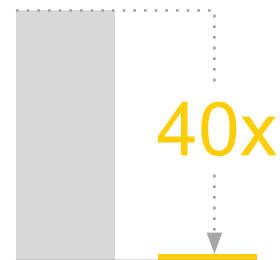
Digital is not new ... but availability of technology, data and capabilities is growing at exponential rate

Technology is becoming faster and cheaper over the past ten years

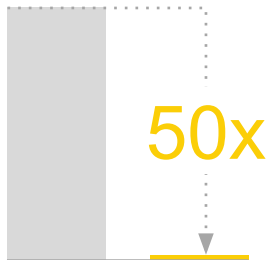
COST OF SENSORS



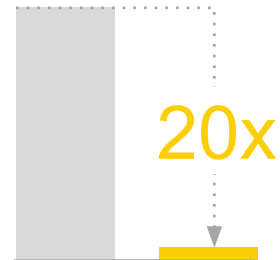
COST OF BANDWIDTH



COST OF PROCESSING POWER



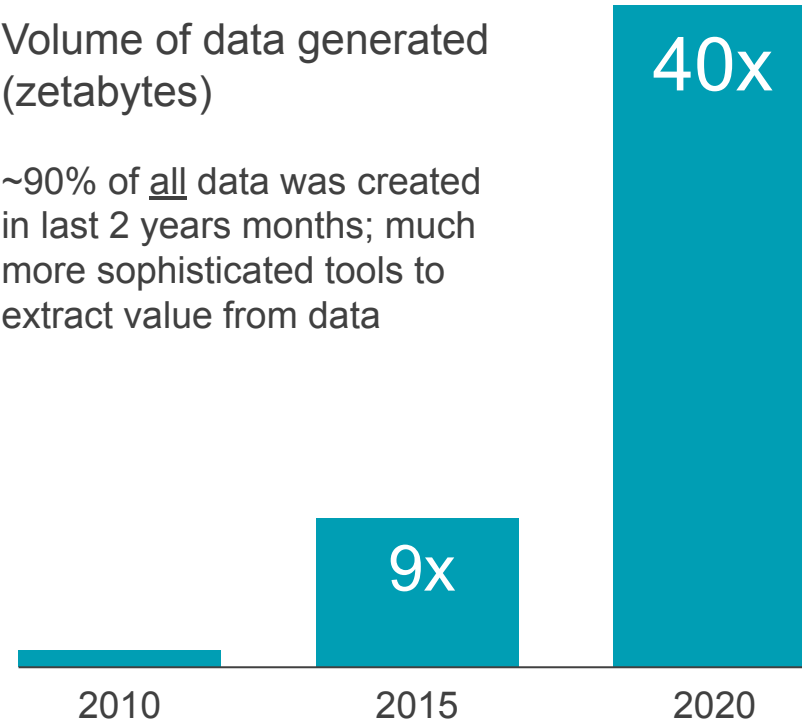
COST PER MB OF CLOUD INFRASTRUCTURE



Data is growing exponentially

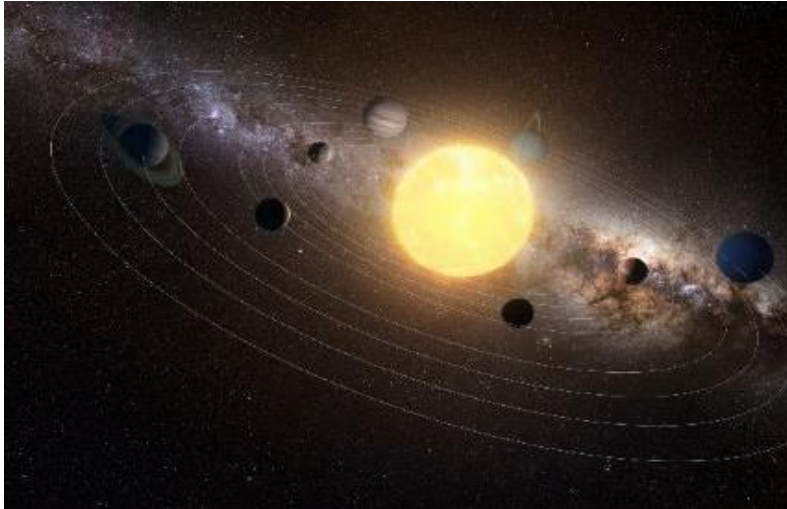
Volume of data generated (zetabytes)

~90% of all data was created in last 2 years months; much more sophisticated tools to extract value from data



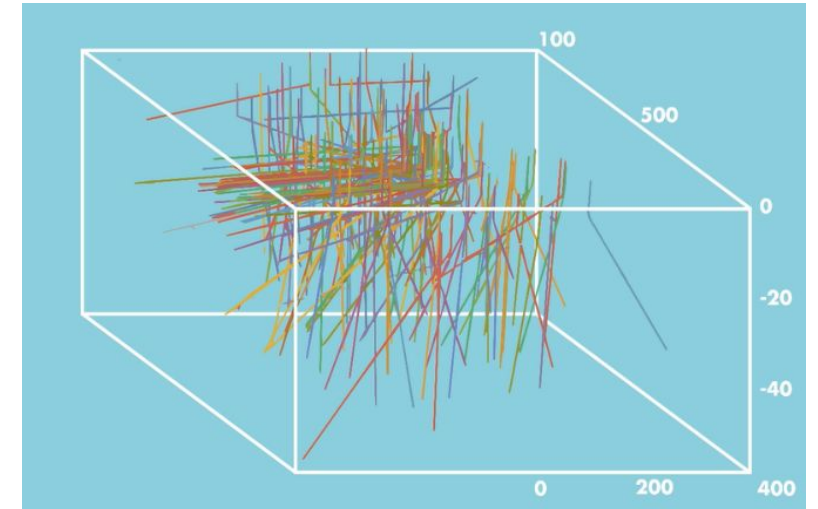
Digitalisation and AI

Driving efficiency in our existing businesses



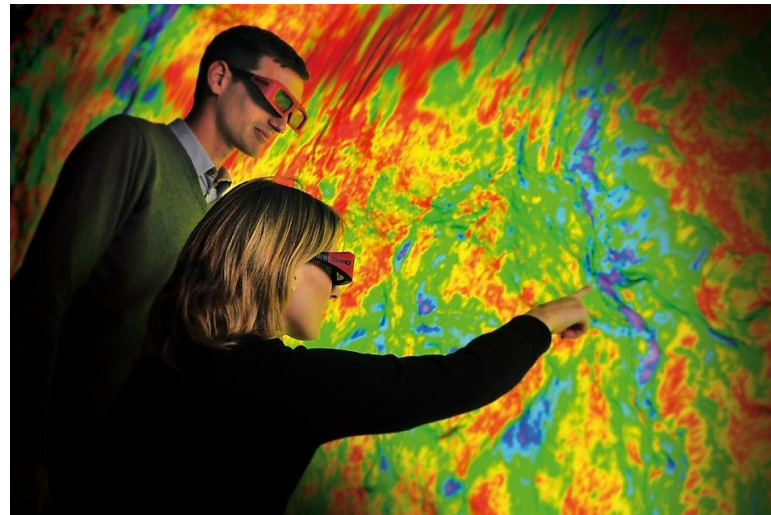
AI Assisted Interpretation

- Redefining workforce capability & mind-set
- Disrupt how hydrocarbons are discovered
- First machine learning application
FaultCrawler, made workflow 80% faster



Subsurface Data Universe

- One common cloud platform for all subsurface data
- Global access to data and new workflows
- Partner with leading data experts



Well Location Optimisation

- AI automatically identifies and optimizes producer and injector well locations
- Assesses multiple scenarios of reservoir conditions simultaneously

Digitalisation and AI

Driving efficiency in our existing businesses



Maximising availability

- Identifies unusual patterns for early intervention or to extend equipment lifetime
- Aggregated trillions of data points through machine learning to detect anomalies.

HSSE for Assets

- Technology and digital solutions are safely powering our progress towards Goal Zero.
- We are using the industrial internet-of-things, robotics, digital realities, and artificial intelligence to transform safety in our assets and projects.
- They make our operations safer by enhancing our staff's ability to prevent failure and stay out of harm's way.



Digital twin

- A Digital Twin is a virtual representation of the physical elements and dynamic behaviour of an asset over its lifecycle
- Drives efficiency by enabling remote operations, automation and significantly improved collaboration

External collaboration is vital to
developing technology at pace



The Open AI Energy Initiative

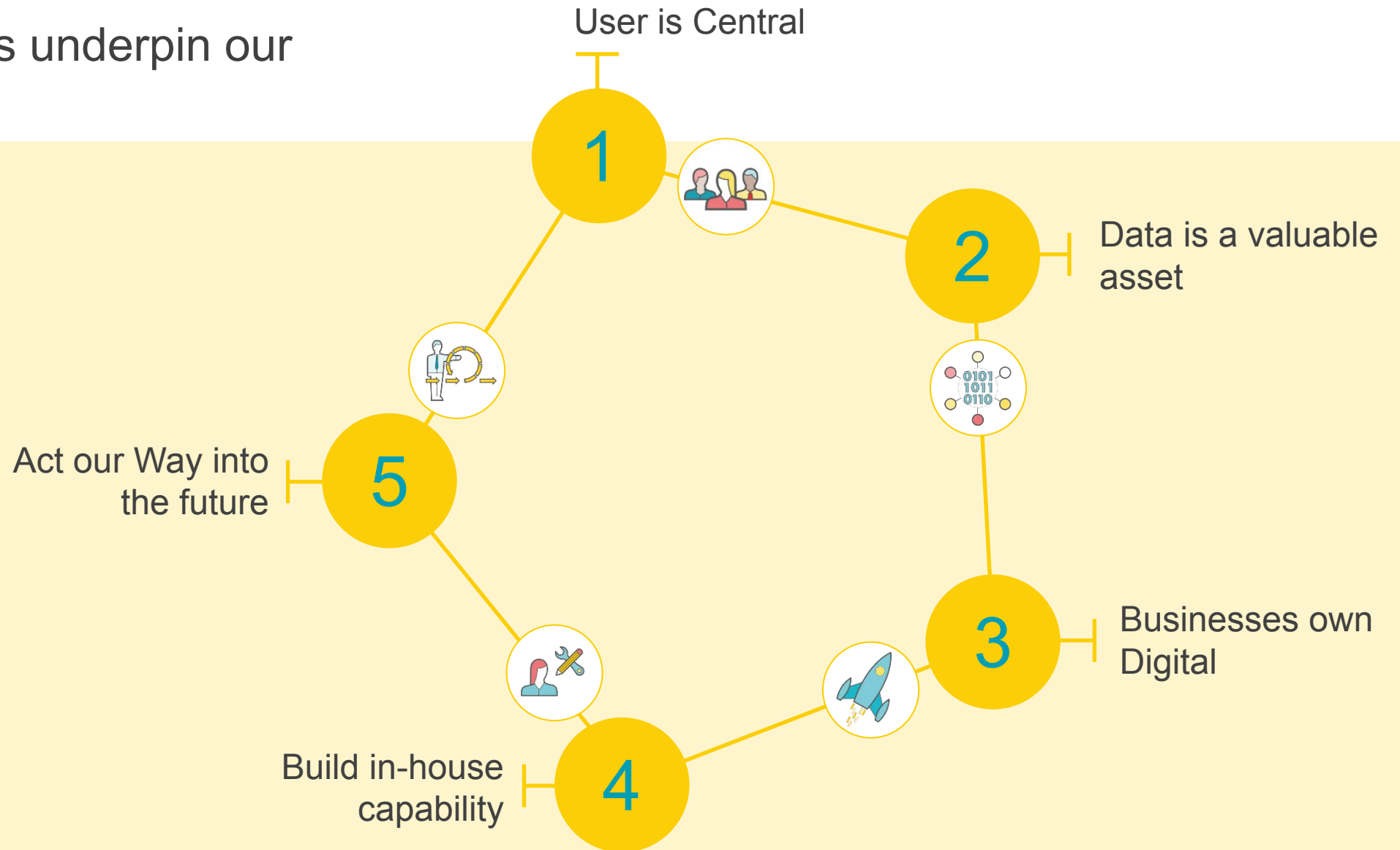
An open ecosystem of interoperable AI solutions
for the energy industry



Adopting AI at scale across the enterprise



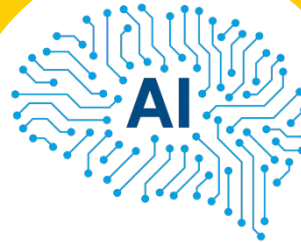
Five principles underpin our digital culture



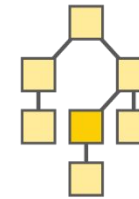
Our digital technology focus areas



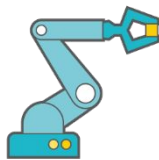
Computational
Science



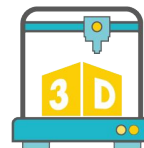
Artificial
Intelligence



Blockchai
n



Robotics



3D printing



Wearables and
New Realities

Collaboration opportunities

- If you are a technology providers in Digital and AI space, let us know what you can bring to the table, and we take the conversation forward in offline mode.
- If you are a technologist and looking for right problem to work on with your skills, keep an eye on following web page,
 - <https://www.shell.com/careers.html>.
- If you are a student, enthusiast in doing AI/ML/DL internship on real data and problem, connect us offline.
 - Prkalp Somawanshi (<https://www.linkedin.com/in/prakalpsomawanshi/>)
 - Naveen Kapoor (<https://www.linkedin.com/in/naveenkapoor/>)
- Shell.ai Hackathons
 - EV Charging Network Challenge [2nd Sept 14th Oct]
 - <https://www.shell.com/energy-and-innovation/digitalisation/digital-and-ai-competitions/shell-ai-hackathon-for-sustainable-and-affordable-energy.html>

