VALLORII

Data-driven Products for Infrastructure Investment

26th March 2025

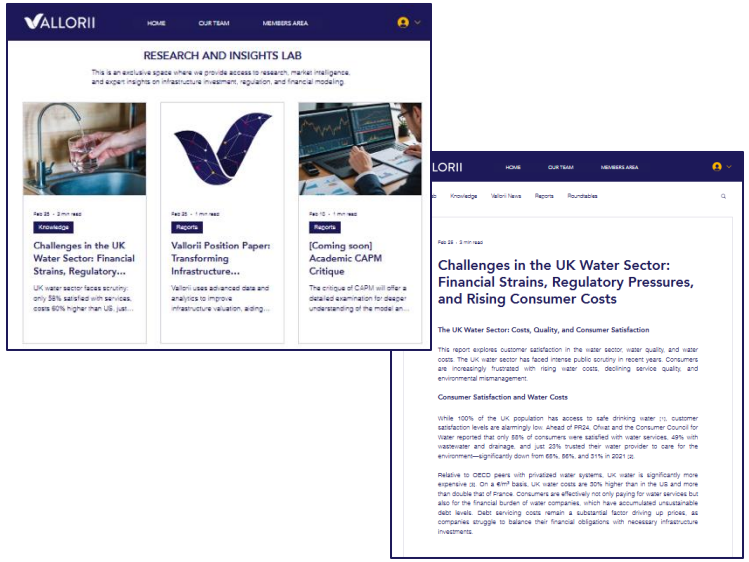
CONFIDENTIAL

Agenda

1. **Introduction and recap**
2. Who pays for UK infrastructure investments?
3. Regulatory models balance investor risk and consumer costs
4. Case studies: Cost of capital for Sizewell C and Thames Water

Progress since our last roundtable
Founding members, new publications and first online tool

Membership



- First **Founder Members** joined
- **Website members area** launched

Insights

- **CAPM thematic paper** circulated to members
- **Working papers** circulated for comments

Analysis and tools

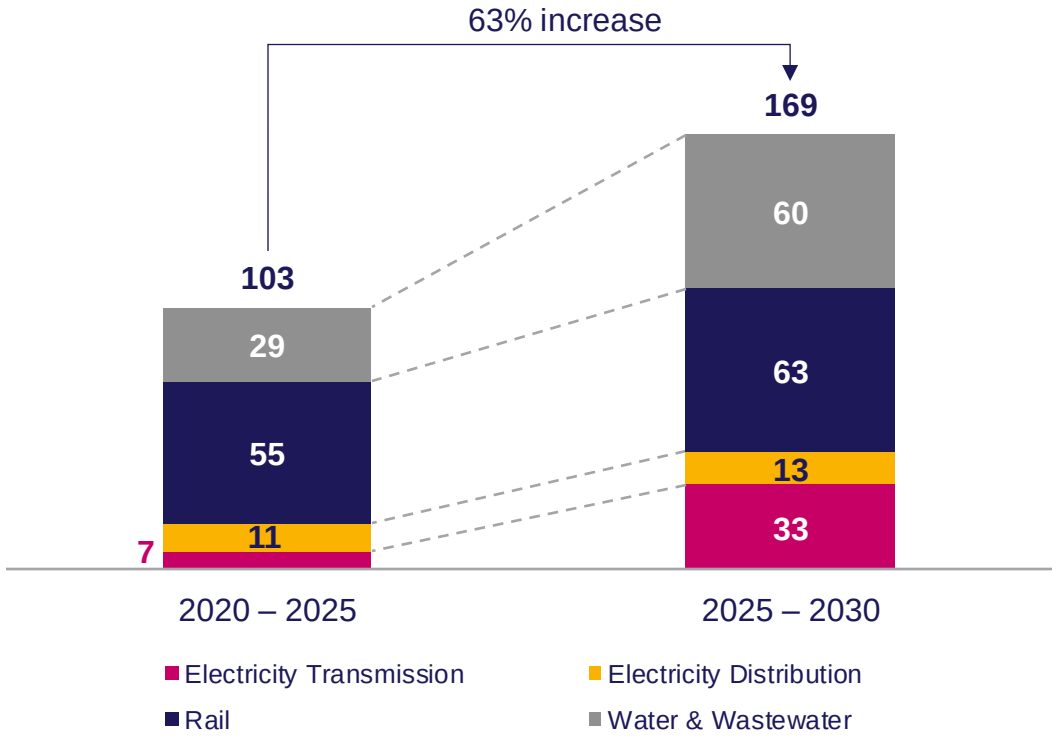
- **Interactive reports** on cost of equity launched (Ofgem, Ofwat)
- **Custom reports** available on demand

Source: Vallorii

Takeaways from last roundtable
Successful step change in investment needs regulatory changes

Current model cannot deliver required investment…

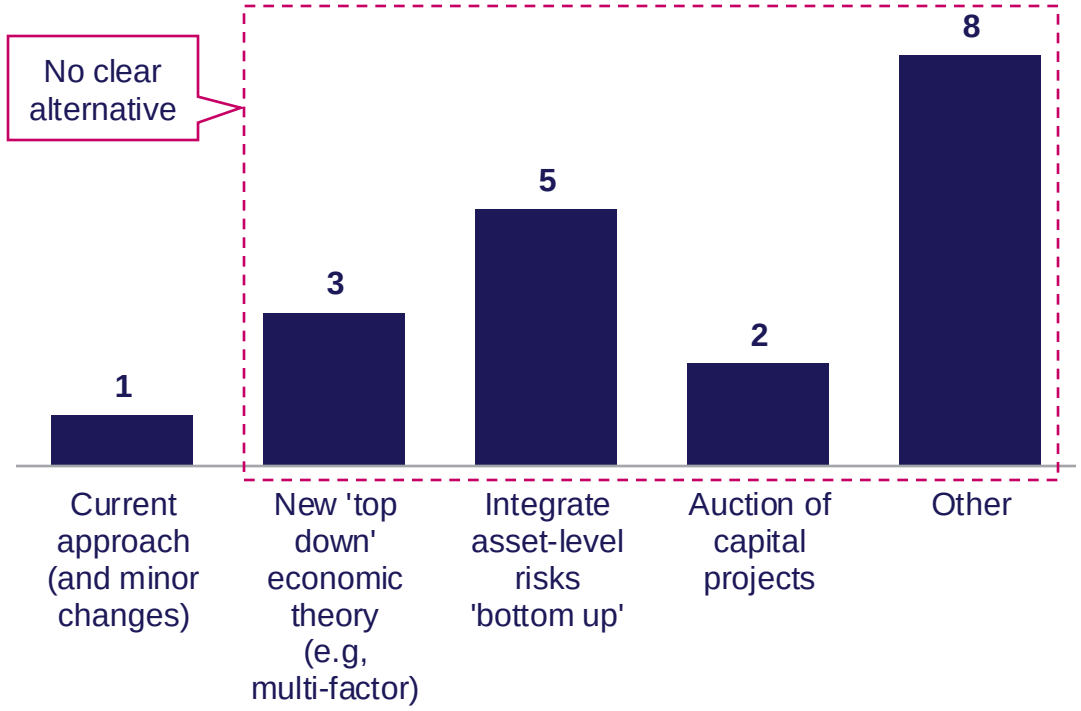
Cumulative capex in £bn (2023 prices)



There is a step-change in (UK) infrastructure investments

…but there is no clearly agreed alternative

Poll of attendees at Jan roundtable – 'What is the right model for sustainable investment in infrastructure?'



>90% of attendees agreed that the current model needed to change to enable a successful step change in investment

Sources: Electricity Transmission: Ofgem: RFPRs & RIIO-T3 Business Plans; Electricity Distribution: Ofgem: RFPRs & DESNZ: Appendix I: Electricity Networks Modelling; Water: APRs & PR24 FD; Rail: Annual Reports (Network Rail & HS2 Ltd.) & NIC: 2nd National Infrastructure Assessment; Vallorii roundtable poll 29th January 2025

Focus for this roundtable
Investment growth is funded by consumers – will they pay?

What could prevent investment?

Consumers may not accept higher bills

- Under RAB model, **consumers pay before seeing benefits**[1]
- Cumulative increases from multiple sectors
- Worsening of cost-of-living crisis

Investors may not invest

- Investors see a variety of **risks that are not compensated for**
- Risk of political backlash if bills too high
- Strong international competition for capital

To enable investment, the system needs to either **reduce investor risk** or **increase investor return** within boundaries of what consumers are willing to pay

Source: Vallorii

1 Project differences exist. Long construction projects have particularly long delays between consumer bills and benefits

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POLL: Are UK consumers willing to fund the £70bn/year[1] infrastructure investment (of which £30bn/yr is private) required through 2030?

A. **Yes –** Plenty of headroom in consumer bills

B. **Some concerns –** Consumers will grumble but be prepared to invest

C. **Serious concerns –** Widespread political pressure to reduce bills

D. **No –** Investment will not happen at the pace required

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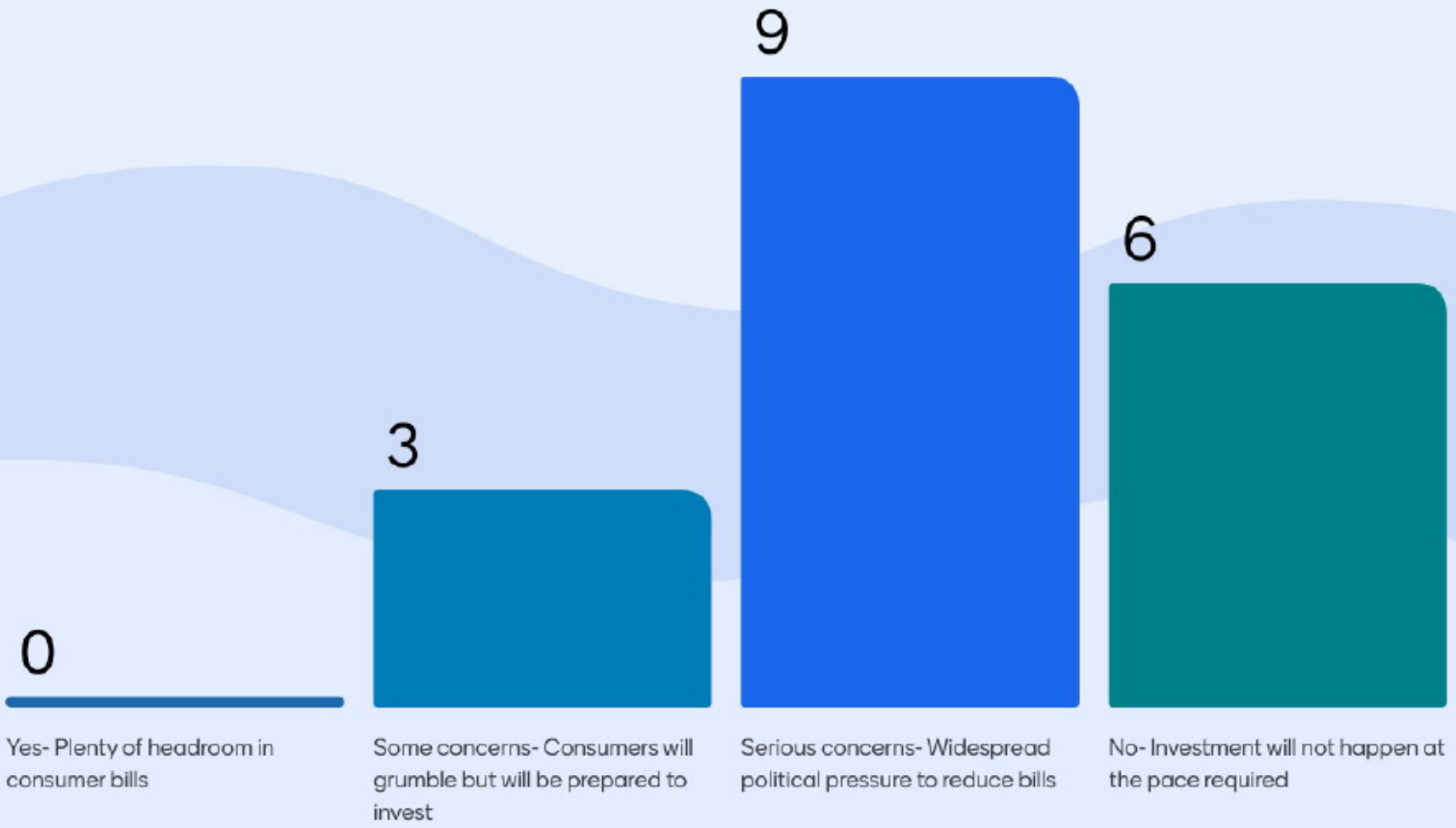
1. Source: Second National Infrastructure Assessment, NIC 2023

Are UK consumers willing to fund the £70bn/year infrastructure investment (of which £30bn/yr is private) required through 2030?



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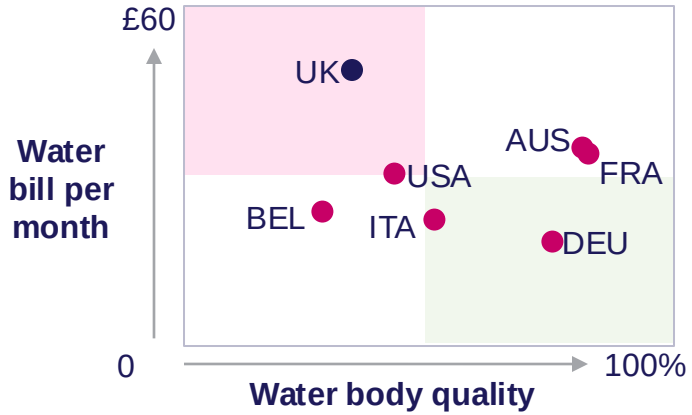
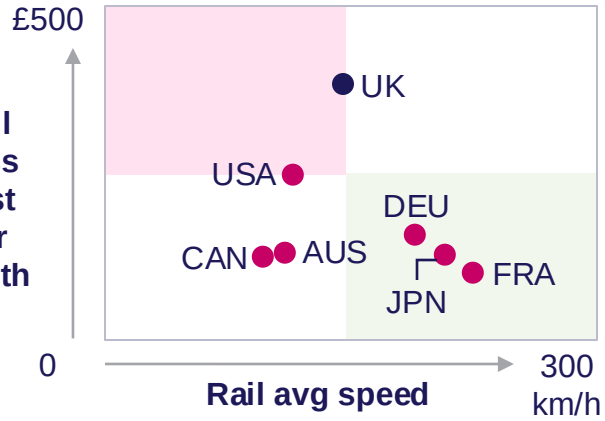
High variability in cost and quality across OECD countries and sectors; UK is a cost outlier in water and rail

Water



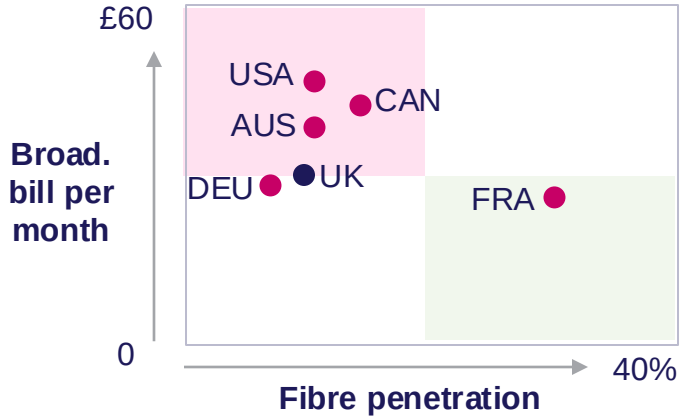
UK water costs highest among OECD peers despite low quality

Rail



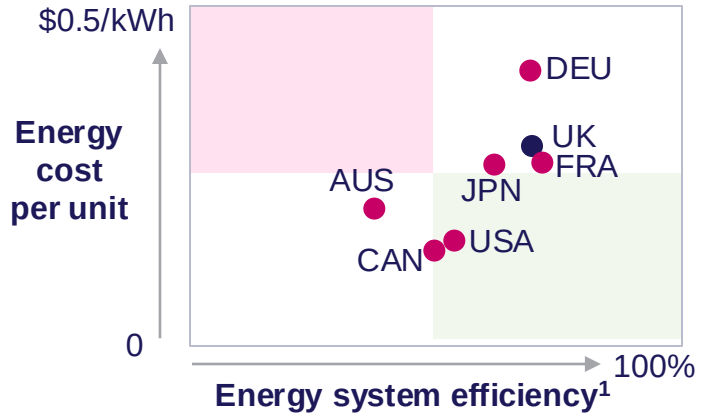
UK **rail costs >2x similar countries** due to fragmentation and aging infrastructure

Broadband



France used strong **public/private partnerships (20.2B) and a competitive regulatory model** to expand fibre network

Energy

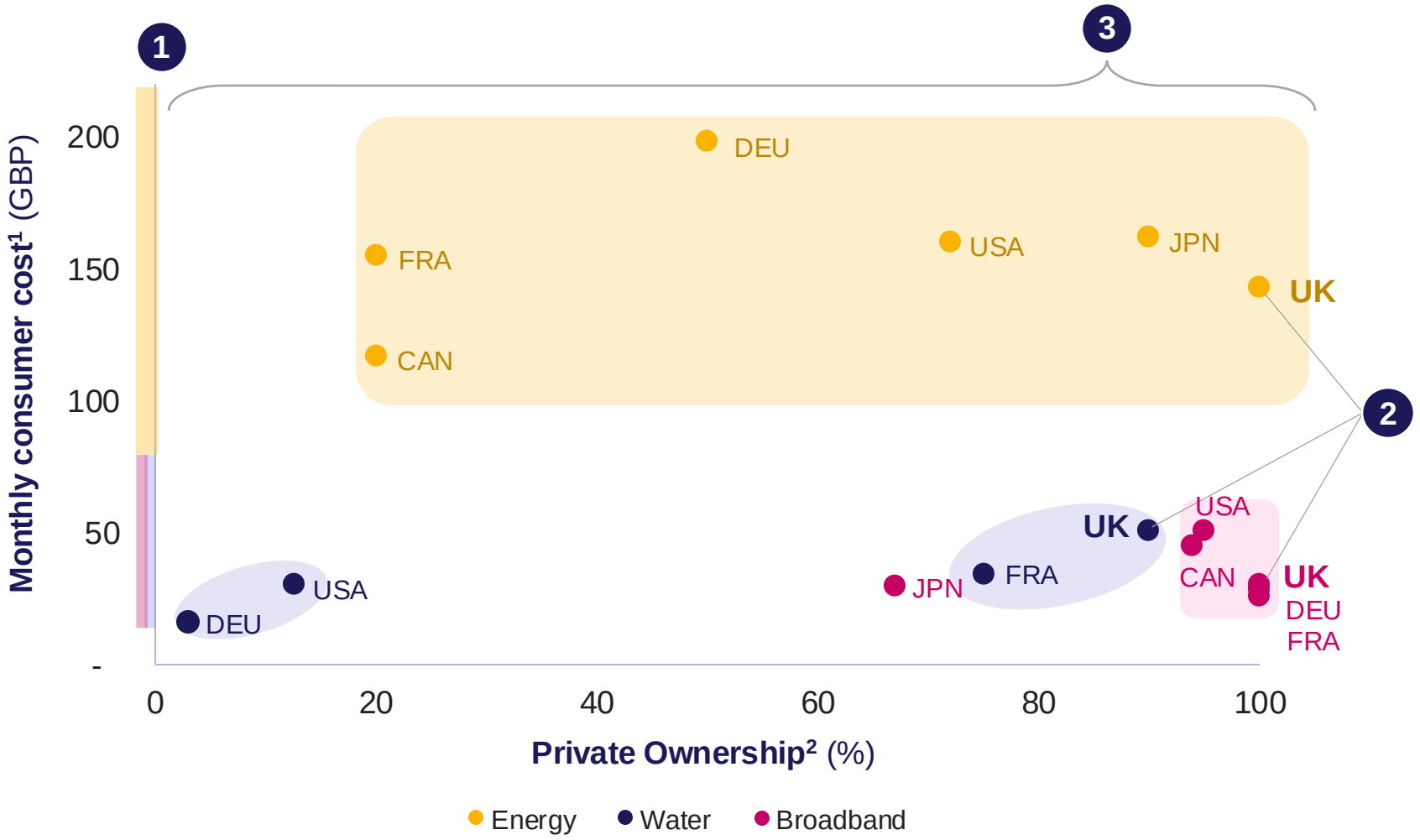


UK shows **high energy system efficiency** compared to its peers, but with **higher energy costs**

Source: Water: UN Water Statistics, EurEau Europe's Water in Figures (2021), Forbes Monthly Utility Costs by State (2024), BBC "How much will I have to pay for my water?" (2025), Canstarblue "What is the average water bill in Australia?" (2024), DEStatis "Charge for drinking water supplied to tariff areas by tariff type"; Rail: National Transport Agencies annual filings; Broadband: OECD Broadband; Energy: IEA Energy Prices, IEA Data Explorer; Certain countries/sectors are excluded due to data availability and readability

1 Efficiency is ranking from ACEEE International Scorecard, and measures policy and performance metrics in four categories (buildings, industry, transport, and national efforts)

Private ownership does not imply higher or lower costs to consumers



Key Insights

1. Higher private ownership share **does not imply higher costs**, independent of country and sector

2. The UK has amongst the **highest private ownership share** across sectors

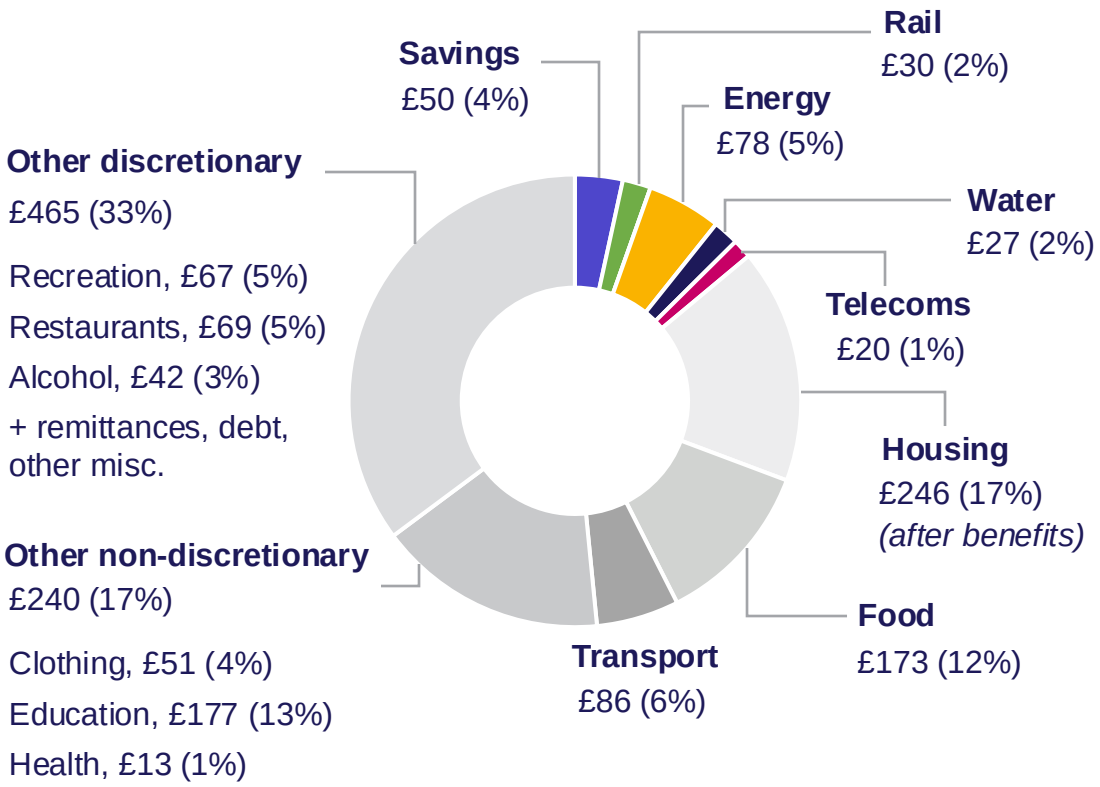
3. Private ownership structures differ between sectors
   - Wide dispersion in energy
   - Bimodal dispersion in water
   - Predominantly private in broadband

Sources: 1. Water: EurEau Europe's Water in Figures (2021), Forbes Monthly Utility Costs by State (2024), Ofwat "What the 2024 price review means for water customers" (2024), Canstarblue "What is the average water bill in Australia?" (2024); Rail: National Transport Agencies annual filings; Broadband: OECD Broadband; Energy: IEA Energy Prices **2.** Private ownership % reflects the proportion of infrastructure assets (energy, water, communications) held by investor-owned companies, based on data from official sector reports and regulatory agencies. Public ownership includes state-owned enterprises, municipal utilities, and cooperatives. If private company partially publicly held without control is assumed to be fully private (as public ownership has no control rights)

UK bills have been stable, but increases are now inevitable, putting additional pressure on household budgets

Lowest-income 30% of UK households spent **11% of their disposable income on utilities**

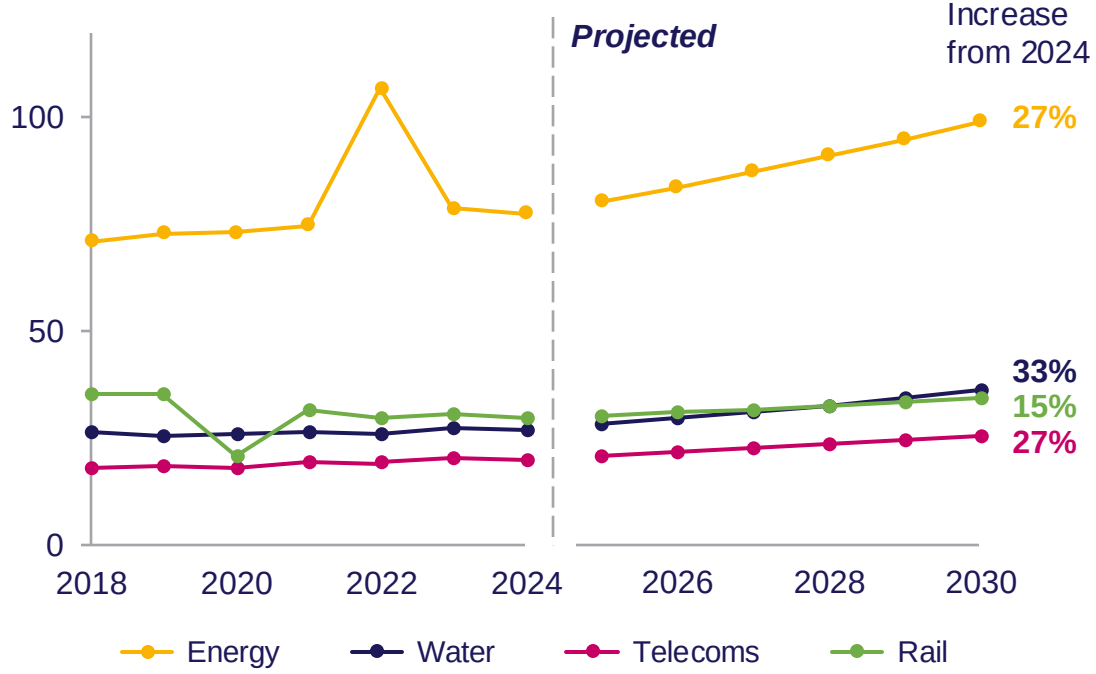
Median monthly expenditure, lowest-income 30% HH, 2024
GBP (% of wallet)



By 2030, real utility bills are expected to **increase 26% (£40 pm, £479 pa, real)**

Median monthly expenditure, lowest-income 30% HH

Monthly bills
(GBP, 2024 prices)



Source: Vallorii analysis based on regulator price determination reports - annual nominal price increases: Ofgem 6.4%, Ofwat 7.2%, Ofcom 6.4%, ORR 4.6%; historical CPI data from OBR, CPI for 2025 and beyond assumed to be 2%; share of wallet data from ONS Living Costs and Food Survey

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Low consumer costs for future capital implies high risks of future costs

ILLUSTRATIVE

TO BE REFINED BASED ON PARTICIPANTS FEEDBACK

Risk for consumers (potential future costs)

Low cost – high risk of future cost

Consumer bears risks

- Risk pass-through
- Government guarantees

Tideway

Sizewell C
The power of good for Britain

High cost – high risk[1]

High investor returns due to

- Non-operational risks (e.g., financial)
- Excessive return allowance

Thames Water

Low cost – low risk[1]

In-period financing

- Higher bills (PAYG rates)
- Gov. financing at RfR

High cost – low risk of future cost

Investor bears risks

- RAB, no pass-through
- CfDs
- DPCs

HinkleyPointC
Helping Britain Achieve Net Zero

Total cost for consumers

"Equity risk does not disappear"

What – If

Regulated returns < Investor perceived risks

Investor risk-transfer, e.g.

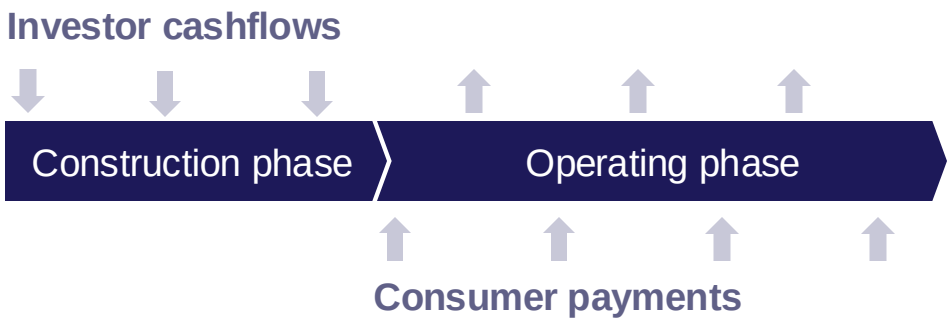
- Minimising maintenance
- Discount-to-RAB

Consumer bears operational and financial risks

Source: Vallorii
1 Of future costs overruns

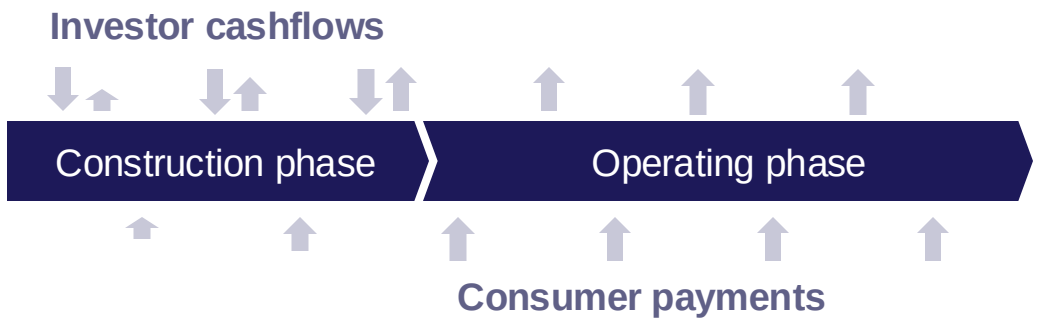
Case study: Construction risk at Hinkley Point C leads to a ~400bps increase in CoE over Sizewell C's RAB model

Contract for difference (Hinkley Point C)



Risks	Bearer	Comments
Revenue	**Government**	Pre-determined price & volume
Construction	**Investors**	Investor pays for cost overruns
Finance	**Investors**	Illiquidity and opportunity cost
Vallorii CoE	**~15%**	If 2012 CfD were issued today

RAB (Sizewell C)



Bearer	Comments
Consumer	Revenues pre-determined through RAB
Investors & Government	Cost overruns partially passed on to RAB
Investors	Illiquidity and opportunity cost
~11%	400bps reduction vs HPC, reduced exposure to construction risks

Source: Vallorii analysis

POLL: Which regulatory model would work best for **Future Large Nuclear Projects?**

A. **Direct Government Funding**
   On gov balance sheet as per first wave of nuclear development

B. **Single Project RAB with capped exposure (as SZC)**
   Investors protected from overruns

C. **Single Project RAB with no construction risk cap**
   Mitigates finance risk but more construction risks shared

D. **Contract for Difference (as HPC)**
   Move back to CfD model

E. **Other / None of the above**

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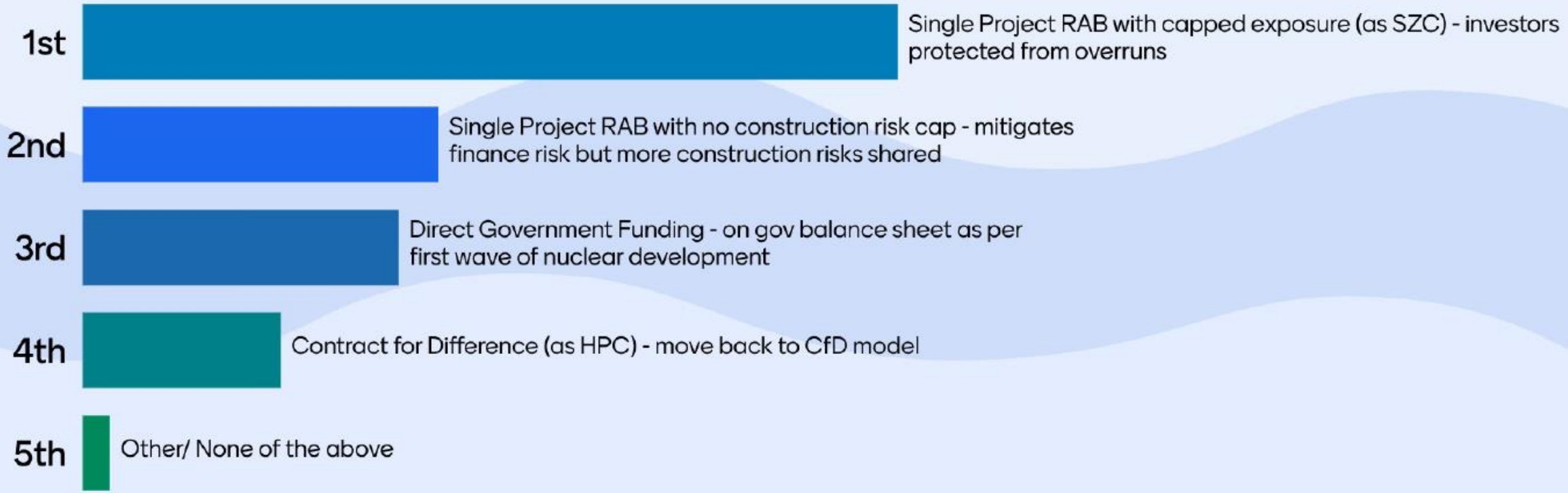
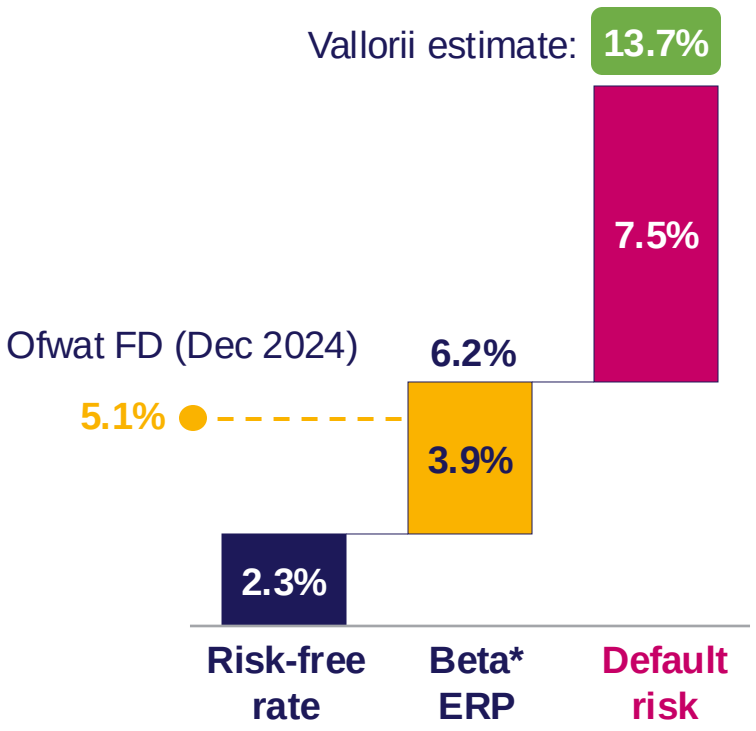
Which regulatory model would work best for future large nuclear projects?



Case Study: Vallorii estimates Thames Water cost of equity around 13.7% based on currently high default risk

Default risk premium raises CoE to 13.7% (real)



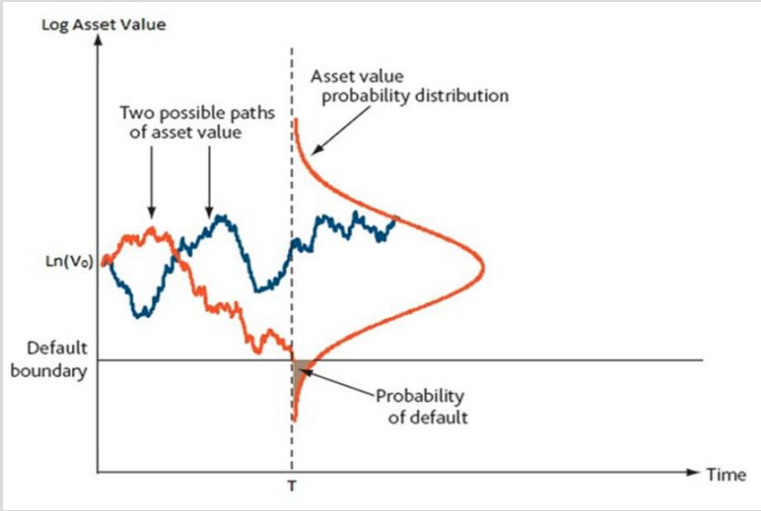
1. 9.75% + fees latest bond yield
2. 27% implied year-1 **default probability**
3. £3bn equity injection lowers default probability to ~7.1%

*Based on UKRN guidance, Ofwat's CoE determination uses a 'through the cycle' interpretation of CAPM. **Here, we use a 'in the cycle' interpretation** that is more appropriate for new equity and allows for the inclusion of additional risks

"CAPM does not consider default risk"

- Under CAPM, assets cannot default
- In reality, default risk warrants a substantial equity premium

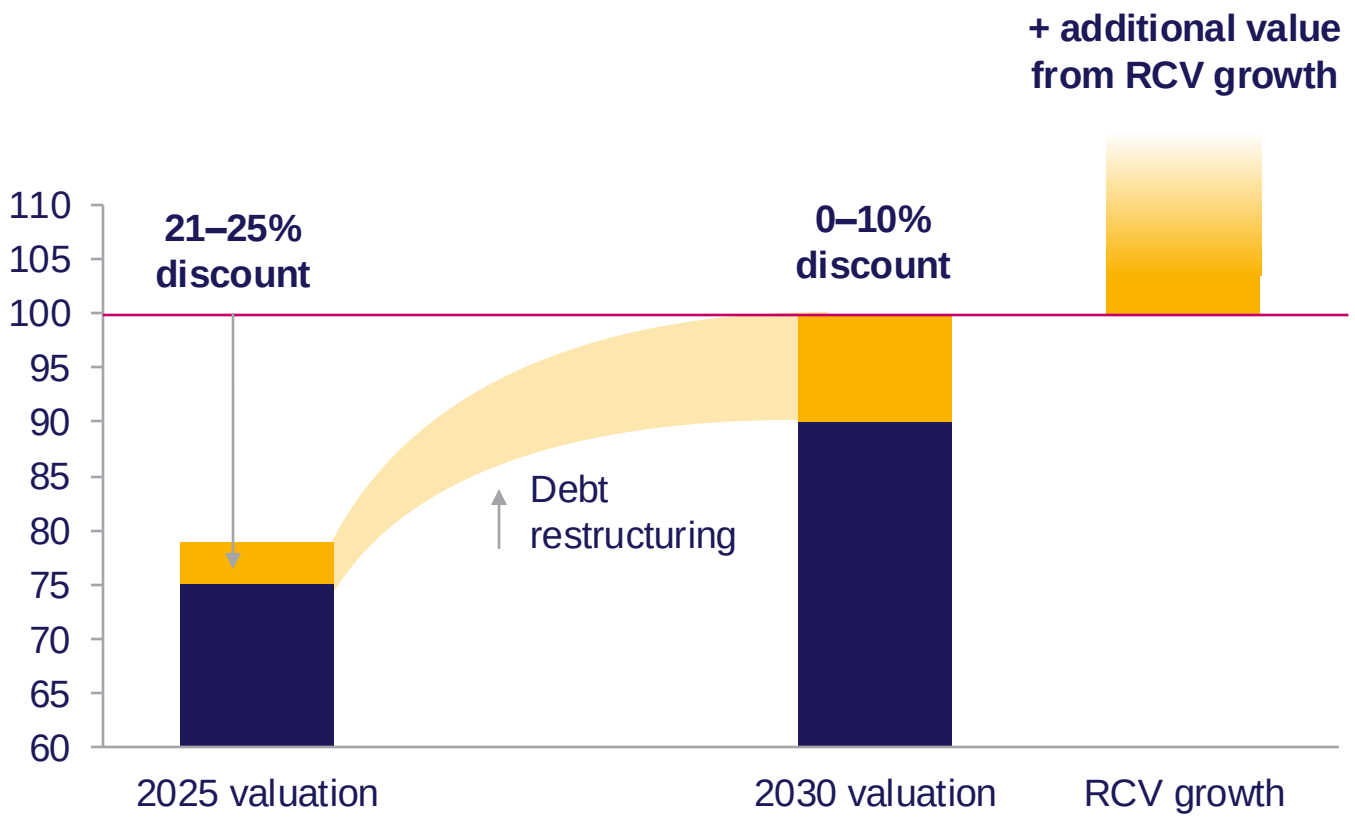
Bank of England: Modelling credit risk (2015)



Source: Ofwat PR24 FD, Bank of England, Vallorii Analysis
1. Beta*ERP calculated using a **6% 'in-cycle' equity risk premium (ERP)**

Case Study: Vallorii values Thames Water at a 21–25% discount to current RCV, based on 13.7% year-1 cost of equity

Thames water valuation, relative to current RCV, based on financial stress



"CAPM does not consider default risk"

- 13.7% CoE declines over 5-year period due to debt restructuring
- Nevertheless, levered WACC exceeds Ofwat CoE, warranting RCV discount

Potential consumer implications

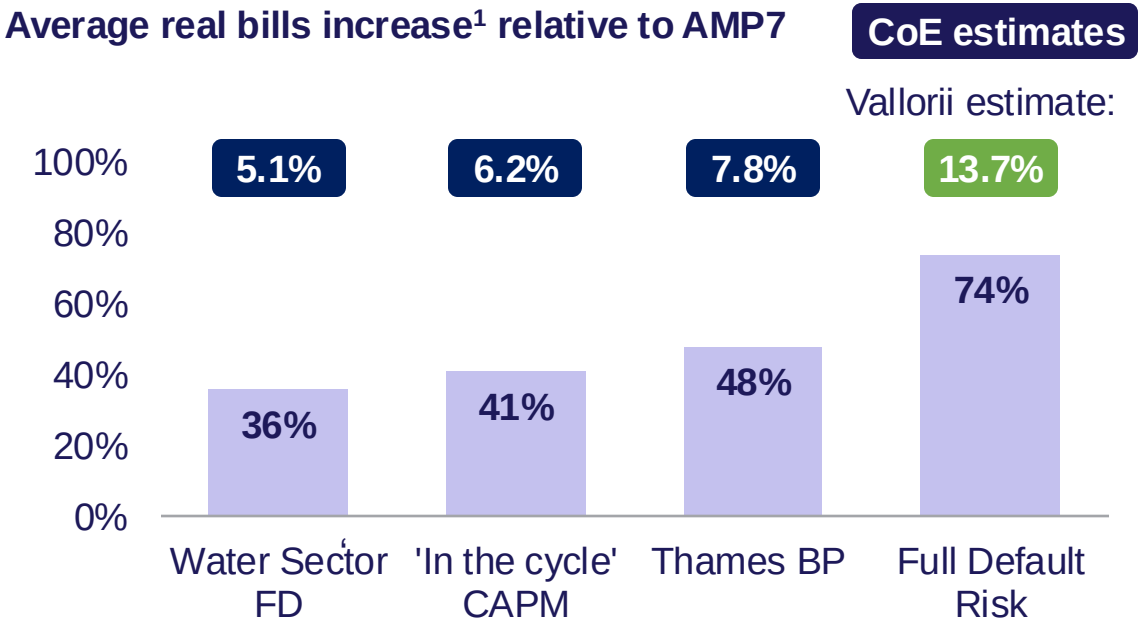
- Operational instability from ownership change (short-term financial turnaround vs. long-term dividend return)
- Underinvestment in operational improvements at RCV discount

Source: Ofwat PR24 FD Key Dataset 2, Vallorii Analysis; assuming cost of equity linearly decreases over time to Ofwat's 5.1% by 2030

Case Study: Regulatory decisions can have a large effect on Thames Water valuations through increasing returns or reducing investor risks

Option 1: Increase CoE – increase in bills

Average real bills increase[1] relative to AMP7



Increase in CoE would decrease RCV discount but lead to further increase in consumer bills, with negative impacts on affordability

Option 2: Change risk allocation among stakeholders

- **a** **Government underwrites debt:** TW refinances at lower interest rates
- **b** **Network upgraded off balance sheet:** External funding and coordination for individual projects/portfolios
- **c** **RCV Linked to performance:** Reduced discrepancy between RCV and actual asset value
- **d** **Penalties from ODIs and PCDs paused:** Penalties are ineffective with dividend rates at zero
- **e** **Business units split to match risk/return:** Separate CoE for water and wastewater

Option 3 – combination, some increase in CoE, some change in risk allocation

Source: Water Sector FD Key Dataset 2, Thames Water: PR24 Business Plan, Bills Waterfall, Vallorii Analysis

1. Bills: Average household bills in London during AMP8 vs AMP7, based on PR24 Final Determination total expenditure

POLL: Which regulatory model would work best for **Thames Water** as it is today?

A. **Special administration / Re-nationalisation**
   Move TW assets to government balance sheet

B. **Combined RAB for full company (as today)**
   Fund multiple projects under single RAB, spreading risks

C. **Split RAB into portfolios with different risks**
   More closely match risk profile to investor risk appetite

D. **Direct Procurement for individual projects**
   Investors bid for projects, driving competition and lowering costs

E. **Other / None of the above**

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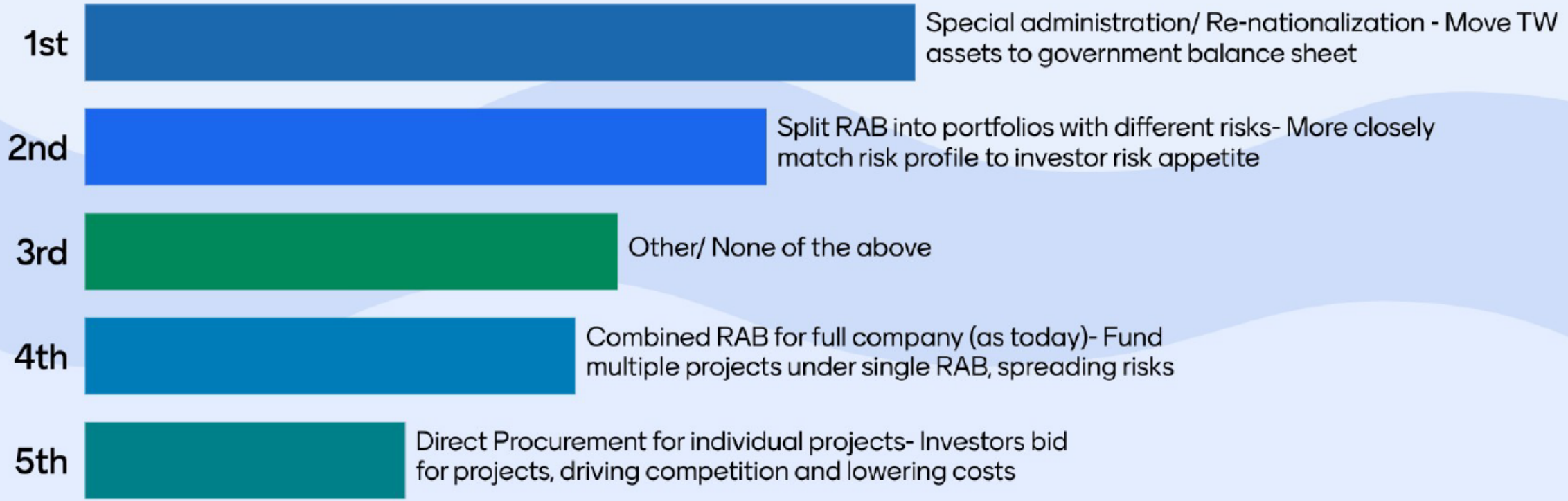
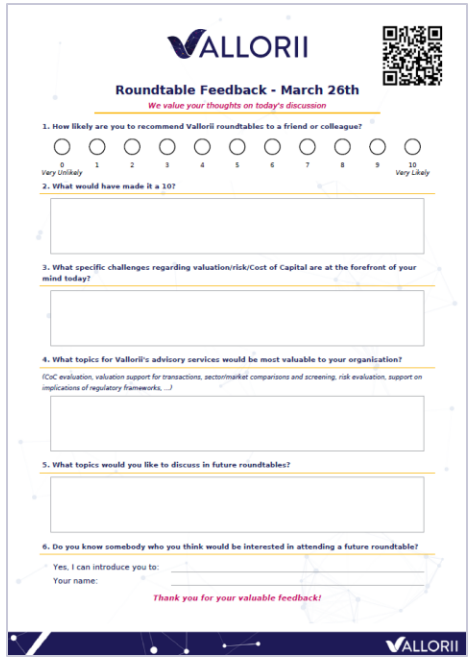
Which regulatory model would work best for **Thames Water** as it is today?



Thank you for your feedback – it is critical to power our progress

Let us know your thoughts on today's session and what you would like to see in the future

- Fill out the form in front of you



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Roundtable Feedback - March 26th

We value your thoughts on today's discussion

1. How likely are you to recommend Vallorii roundtables to a friend or colleague?

0 1 2 3 4 5 6 7 8 9 10

Very Unlikely — Very Likely

2. What would have made it a 10?

3. What specific challenges regarding valuation/risk/Cost of Capital are at the forefront of your mind today?

4. What topics for Vallorii's advisory services would be most valuable to your organization?

(CoC evaluation, valuation support for transactions, sector/market comparisons and screening, risk evaluation, support on implications of regulatory frameworks, ...)

5. What topics would you like to discuss in future roundtables?

6. Do you know somebody who you think would be interested in attending a future roundtable?

Yes, I can introduce you to: _____

Your name: _____

Thank you for your valuable feedback!

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- Scan the QR code and complete online

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Upcoming Events

Vallorii Roundtable
20th May

1430–1600

Private C-level Dinner
12th June

1900

Reach out to Vallorii@vallorii.com for details

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