

NGGT_ANNEX_INNOVATION - RIIO-2 Innovation Roadmap (Aug 2020 Update)



	2021	2022	2023	2024	2025	
NIA £69m Strategy - £35.5m HPDG - £27m Other Hydrogen - £6.5	(H) ProjectCentrum Feasibility (£2m)	(H) ProjectCentrum FEED (£2m)				
	(H) Project Union Feasibility (1 st Feeder) (£0.5m)		(H) Project Union Feasibility (Next up feasibility reviews) (£2m)			
		(FFF) Made Smarter Pipeline of the Future – [Industry 4/5, IOT, Security] Energy Industry Collaborative Project (£1.5m)				
		(FFF) Autonomous robotics for H2 safety & Decommissioning (£1.5m)				
		(FFF) Gas Detection, Leak Reduction for H2 – Sensing & Vision Systems (£0.9m)	(FFF) Data and Virtual Twin Integration for H2 Digital Twin (£1.25m)			
		(H21) Collaborative Projects x5 (20% 3.9m) (£0.78m)				
		(GIGG) Energy Systems Transition Collaborative Projects x5 (20% 4m) (£0.8m)				
		(RFD) Decarbonising Construction Feasibility (£0.5m)	(RFD) Enhanced safety for maintenance H2 (£1.25m)			
			(RFD) New Material Development for H2 Assets (£2.2m)			
		(Safety) Energy Tx in H ₂ Service (£0.5m) (D)	(RFD) H2 Compressor Strategy (£1.5m)			
		(Safety) O ₂ Impact on HP Pipeline (£0.3m)	(RFD) H2 ready Smart Networks (£0.5m)			
		(Safety) Safe Venting of Hydrogen (£0.3m)		(RFD) AI for Decarbonised Systems (£1.0m)		
		(Safety) Venting & Recompression (£0.3m)	(DES) H2 Powered Recompression (£0.5m)	(RFD) Decarbonising Construction FEED (£0.5m)		
		(Safety) Hazardous Areas for AGIs (£0.3m)	(Safety) Lining of NTS Pipelines (£0.5m)			
		(ST) Common Transition Pathways (20% £0.5m) (£0.1m)	(ST) Rollout Methodology & Strategy (20% £10m) (£2m)			
		(ST) New Modelling Tools & Capability (60% £3m) (£1.8m)				
		(ST) Investigation of Impacts of Purging During Conversion – Removing Methane Fugitive Emissions (20% £2m) (£0.4m)				
		(ST) System Transformation Data Project (50% £2m) (£1m)				
		(ST) Identifying Market Needs (20% £2m) (£0.4m)				
		(ST) Whole System Cost Benefit Analysis / Options Appraisal Methodology (50% £2m) (£1m)				
		(ST) Behavioral Change & Disruption (£0.1m)	(ST) Transmission Network Design (£7m)			
		(DES) FutureGrid Skills & Competencies (£0.5m)	(ST) System Operator Transition to Hydrogen (55% £20m) (£11m)			
		(DES) FutureGrid Extended Control Room Capability & Pipeline Sensing (£0.7m)	(DES) H2 Business Process & Regulation Review (£0.75m)			
			(DES) Accurate Whole System Demand Forecasting – follow on from Real Time Networks (£2.75m)			
		(DES) Online feasibility for compressor stations & systems (£1.75m)				
		(DES) Carbon Capture for Blue Hydrogen (£2.25m)				
	(DES) Deblending Collaborative GB Strategic Plan (£2.5m)					
	(DES) H ₂ Deblending Phase 2 (£0.5m)	(DES) Future Markets Study (£1.25m)				
	(DES) H ₂ Compression 2-10% (£0.5m)	(DES) H ₂ Infrastructure Pathways for Automotive, Rail, Air and Maritime (£1m)				
	(DES) H ₂ Compression Study >10% (£0.6m)	(DES) FutureGrid Phase 1 Technology Gaps Resolution (£8m)				
NIC	(DES) FutureGrid Phase 1 - H ₂ Test Rig – Testing 2% 20% 100% H ₂ (£12.69m)					
SIF £60m		(DES) FutureGrid Phase 2a – Deblending (£7m)				
		(DES) FutureGrid Phase 2b – H ₂ Compressor Solution >10% H ₂ (£8m)				
		(DES) FutureGrid Phase 3 – Third Party Testing (£5m)				
		(DES) FutureGrid Online Trials – Industrial Customer & Production (£20m)				
			(H) ProjectUnion – Industrial Clusters (£20m)			
Other £36m	Funding outside of the RIIO-2 mechanism	(DES) Innovate Projects for H2 Transition of Automotive, Rail, Air and Maritime (£5m)				
		(H) Project Cavendish Hydrogen Production FEED (£15m)				
	(H) Project Acorn (£1.1m)			(H) ProjectCentrum H ₂ Production (£15m)		

NOTES:
 → The Roadmap is under development and therefore is likely to change
 → Costs are estimated based on best practice & expected levels of work
 → Activities past 21/22 are subject to change based on business requirements

KEY:
 (DES) – Decarbonised Energy System
 (RFD) – Ready for Decarbonisation
 (FFF) – Fit for Future
 (HPDG) – Hydrogen Projects
 (H) – Additional Hydrogen Projects
 (GIGG) – Other Network Led Projects