

# Non-Domestic Energy Efficiency Frameworks (NDEEF)

SFC and Colleges – GPSEDS Workshop

**Richard Lockhart** - SFT Associate Director

**Andrew Wholley** - NDEEF PSU Principal Consultant

**October 2021**

**ND  
EE** Non-Domestic  
Energy  
Efficiency  
Frameworks

# Summary

1

## **Introduction**

Introduction to the NDEE Frameworks

2

## **Delivering EnPCs**

Approach and benefits of EnPCs

3

## **Project Support Unit and Case Studies**

Grant funded support and outcomes

4

## **Opportunities and Challenges**

Focus areas and interface with the Green Public Sector Estates Decarbonisation Schemes (GPSEDS)

# NDEE Framework Development – Upscaling Public Sector Energy Efficiency Investment

- Initiated in 2015 by SFT as part of challenging national decarbonisation targets
- Drawing on good existing practice from across UK (ReFIT, CEF etc.)
- Specific to Scottish public and third sector
  - Exemplar organisations
- Supporting advisors
- Initial Framework live in 2016

SCOTTISH  
FUTURES  
TRUST



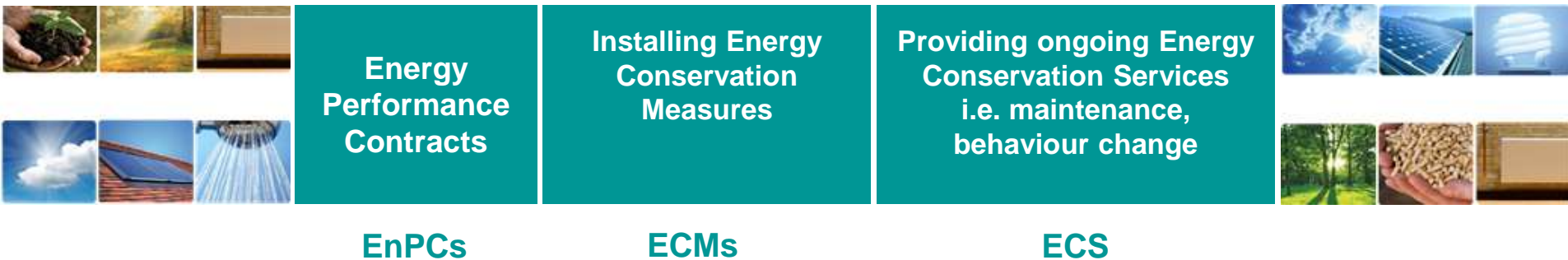
**Deloitte.**

C/M/S/  
Law . Tax

M M  
MOTT  
MACDONALD

eevs

# Overview to Energy Performance Contracts (EnPCs)



## EnPC – Drivers

↓ kWh

### Upscaling Energy Efficiency

Increasing the scale  
of energy efficiency  
projects – estate  
wide improvements

↓ CO<sub>2</sub>

### Reducing Emissions

Supporting energy  
reduction targets  
and regulation at  
local and national  
level

↓ £

### Saving Money

Reducing your  
revenue costs  
through 'spending to  
save'



### Meeting Responsibilities

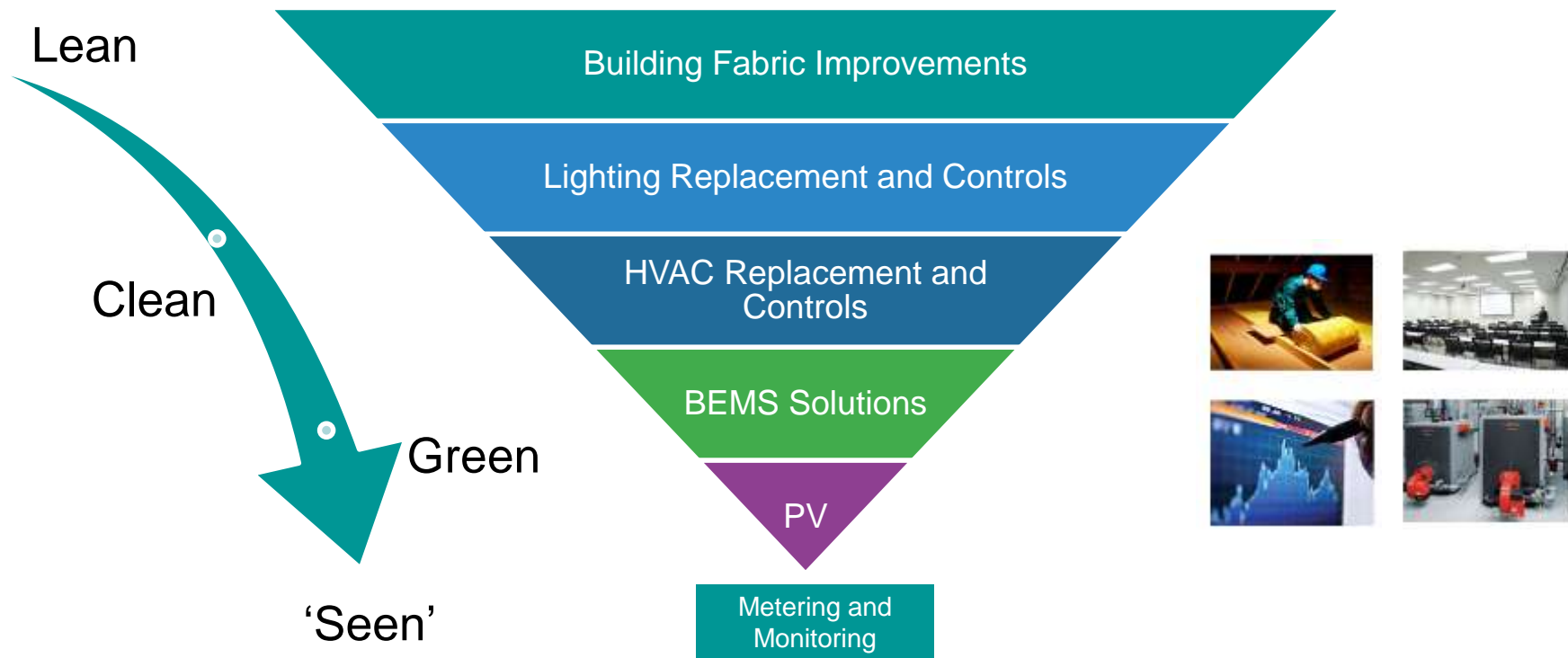
Meeting CSR  
through economic  
and community  
development  
opportunities



### Building Improvements

Improving the  
environment of your  
built estate

# EnPCs - Whole Building Approach to Energy Efficiency



# Principles of NDEE Frameworks Approach

1

## Payment Linked to Guaranteed Savings

Detailed Measurement and Verification outcomes linked to Contractor payment. Savings targets can be £, kWh and/or t.CO<sub>2</sub>.

2

## Specialist Contractors

OJEU compliant Frameworks of specialist Contractors, with open Sub-Contractors for differing project requirements/localities

3

## Funded Project Support

Up to £50,000 grant funded Project Support Unit Project Management, Technical Advisory and Procurement Advisory services.

4

## Standardised Processes and Documentation

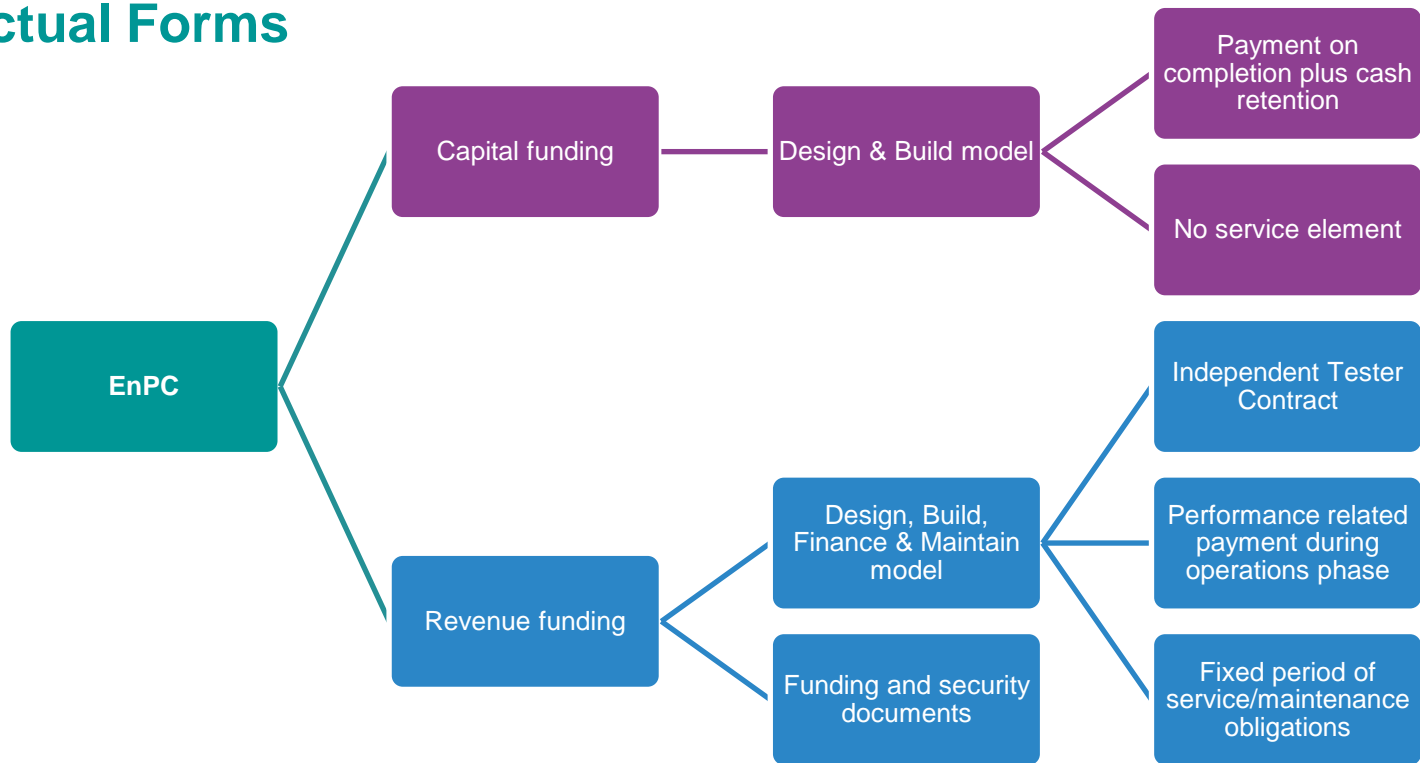
Standard form contracts and agreements, alongside template tender and Investment Grade Audit documentation, streamlining development and delivery.

5

## Wide Funding Opportunities

Third party financing opportunities. Close working with other grant or loan bodies such as Salix Finance and SFC.

# Contractual Forms



# NDEEF EnPC Opportunities

## Mandated vs. Open Scope

- Variable project scoping opportunities
- Lessons learned in previous projects

## Large Heat & Power Schemes

- Possible however energy efficiency must be the significant factor of an EnPC
- De-risk performance and increase project scale and outcomes

# NDEE Frameworks 2020-2024



- Energy Performance Contract (EnPC) Frameworks
- Open to complete Public and Third Sector
- Latest Framework of Contractors live until **March 2024**
- **Two Lots**; under £1m, over £1m

## NDEE Framework Contractors 2020-2024 > £1m

### ➤ 11 Framework Contractors



Energy Solutions



## NDEE Framework Contractors 2020-2024 < £1m

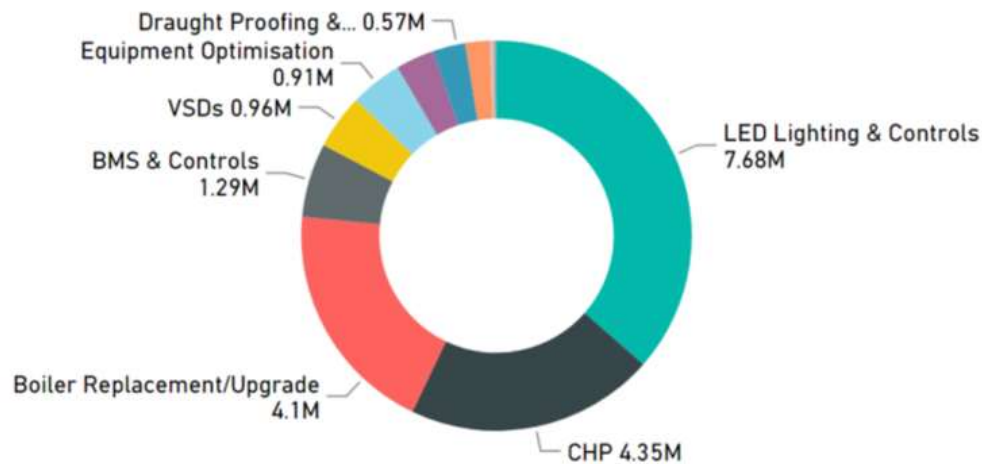
### ➤ 5 Framework Contractors



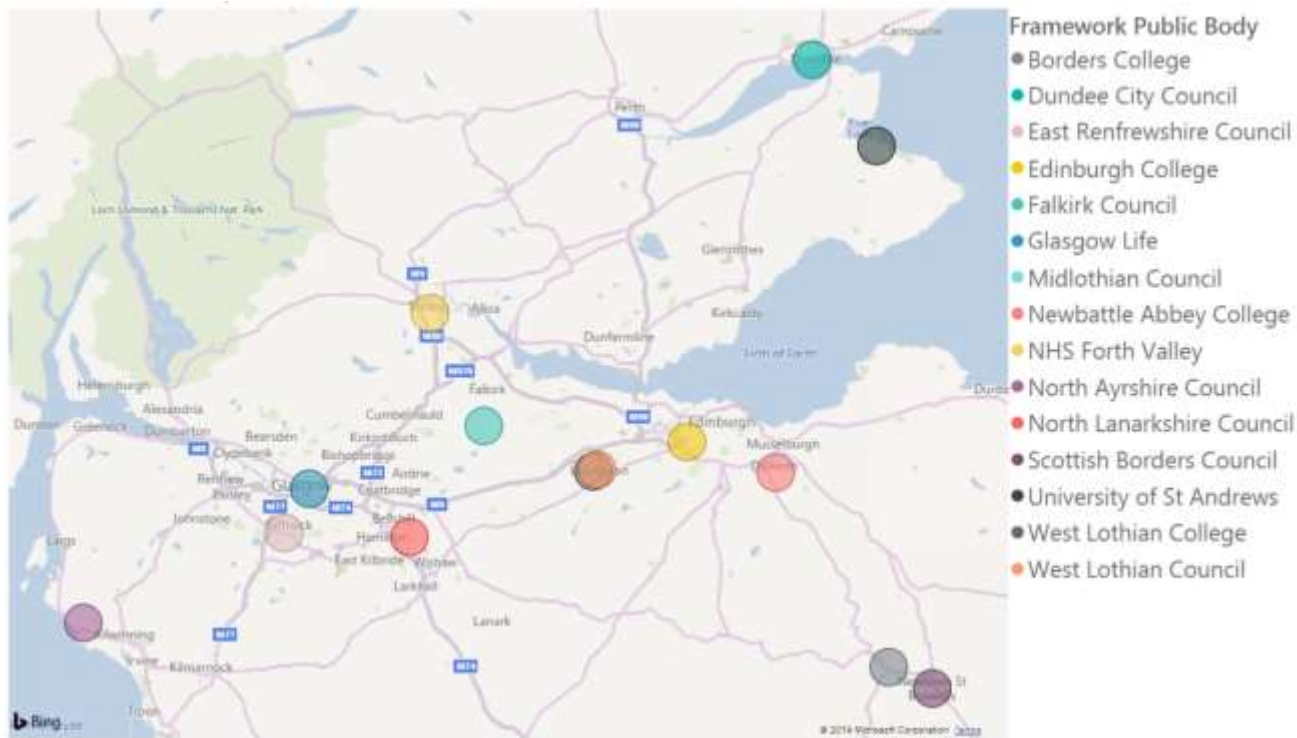
# NDEE Framework 2016-2020 Projects

- Local Authorities
- NHS
- Universities
- Higher Education

- £0.5m to £3.8m in scale

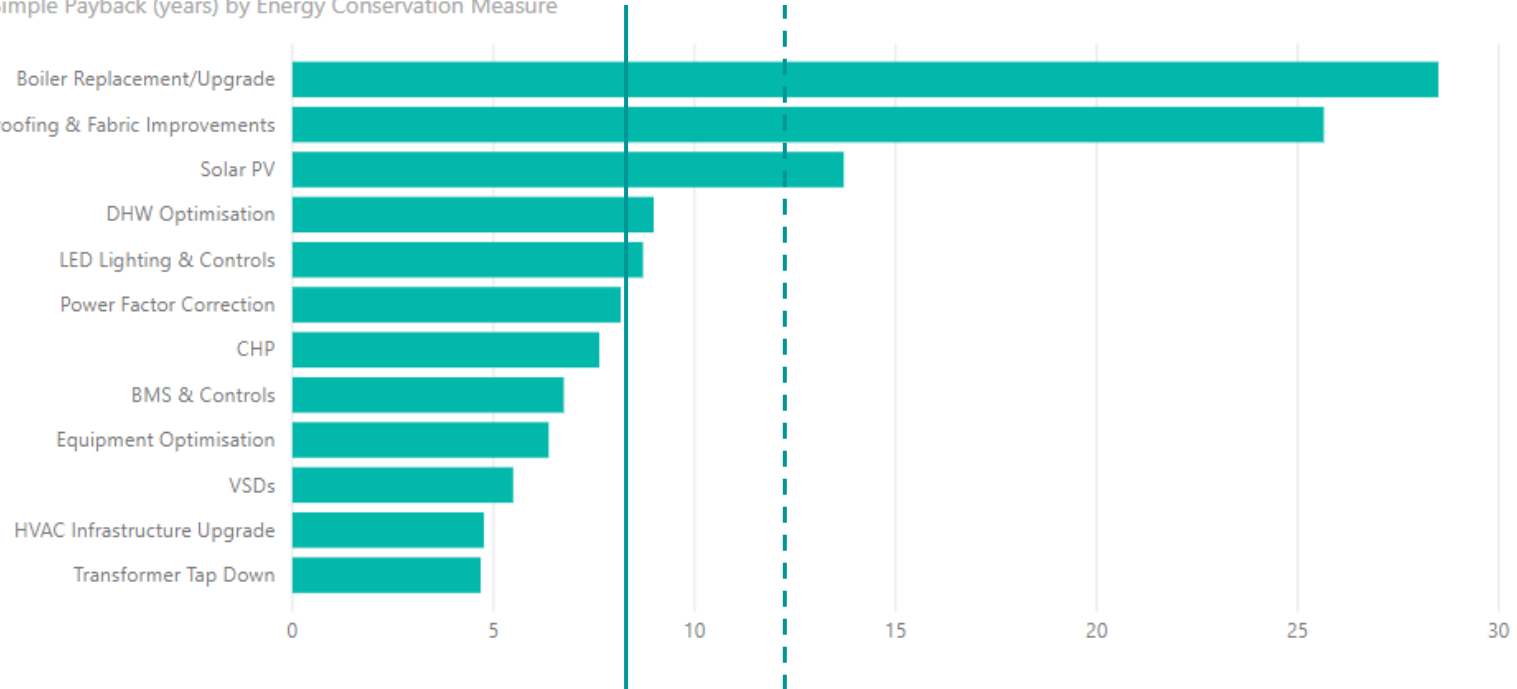


# NDEE Framework 2016-2020 Projects



# Energy Conservation Measure (ECM) Summary – Payback

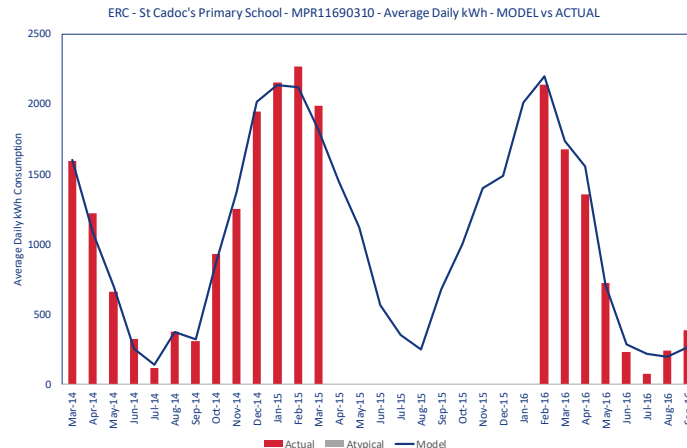
Average of Simple Payback (years) by Energy Conservation Measure



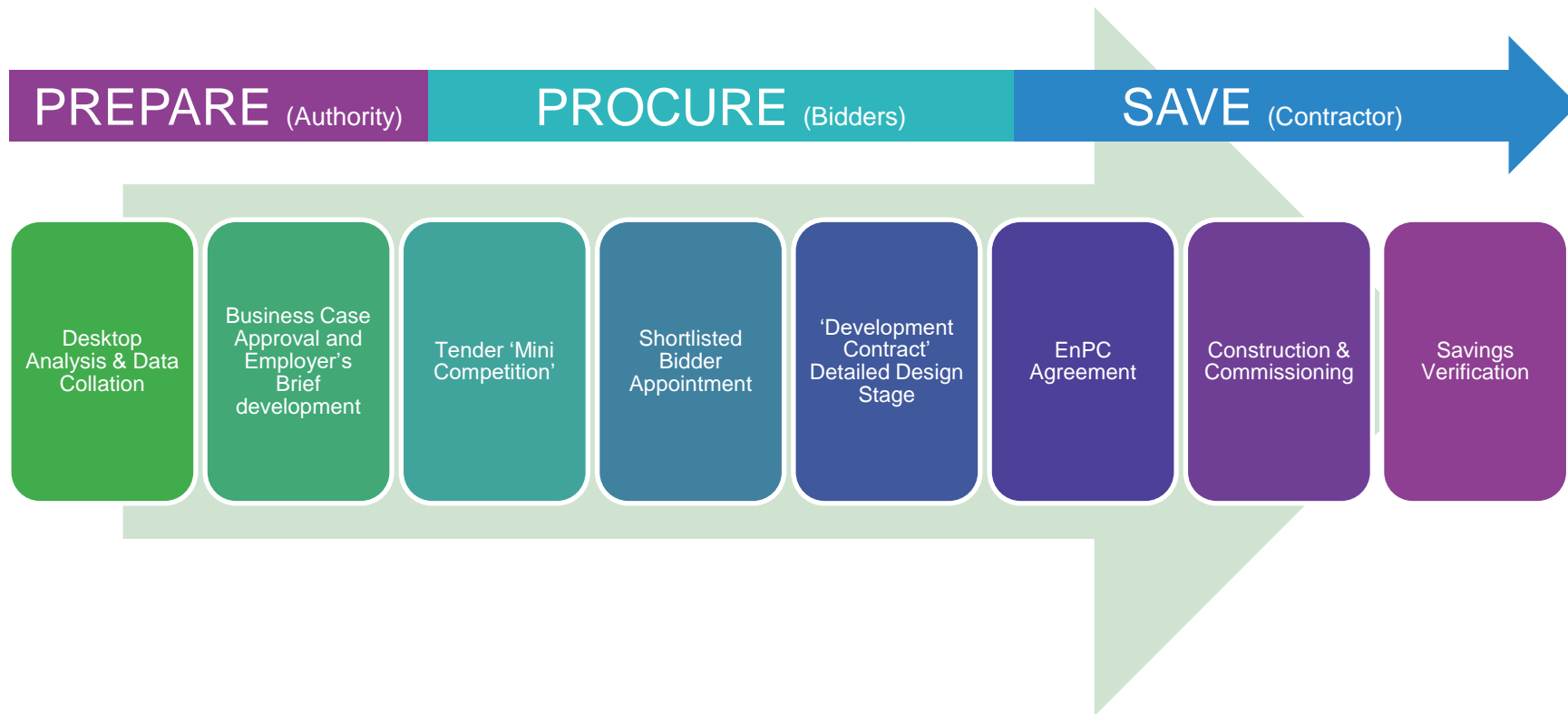
Typical multi-ECM EnPC Payback

# Measurement and Verification (M&V)

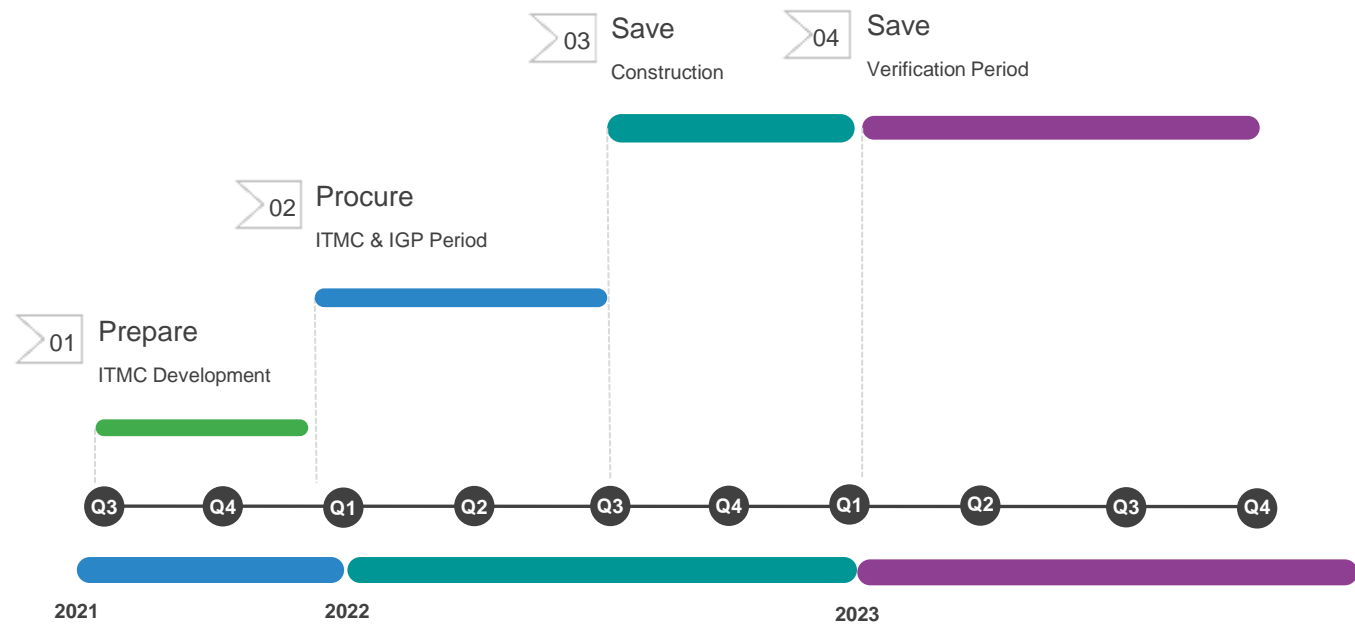
- EnPCs underpinned by **Guaranteed Energy Cost Performance (GECP)**
- Agreed in Contract  $\equiv$  Guaranteed annual cost savings
- Detailed M&V plans and reporting
- Follows best international practice (IPMVP)
- Innovation in process
- Importance of data and lessons learned



# NDEEF EnPC Project Process



# Typical EnPC Programme



# NDEEF Project Support Unit

- Project Support Unit (PSU):
  - Project Management, Technical and Procurement Advisory Support
  - Grant funded by Scottish Government up to **£50,000 per project**

[NDEESupportUnit@mottmac.com](mailto:NDEESupportUnit@mottmac.com)

<http://www.gov.scot/Topics/Business-Industry/Energy/Action/lowcarbon/NDEE>

## Project Management

- Process and Contractor Management Support
- Data Collation

## Technical Advisory

- Project Scoping and Benchmark Assessments
- Energy Audits
- Tender and Detailed Design Support
- Measurement and Verification Specialist Support

## Procurement Advisory

- Business Cases
- Tender and Contract Development
- Ad-hoc specialist support

# PSU Consortium



# Colleges Energy Efficiency Pathfinder (CEEP)

## Capital stimulus funded project for Colleges

Investment at scale.

Four successful colleges in Edinburgh, Newbattle Abbey, Borders and West Lothian.

## OBC agreed in 2016 by others

Developed on behalf of Scottish Funding Council – fund managers

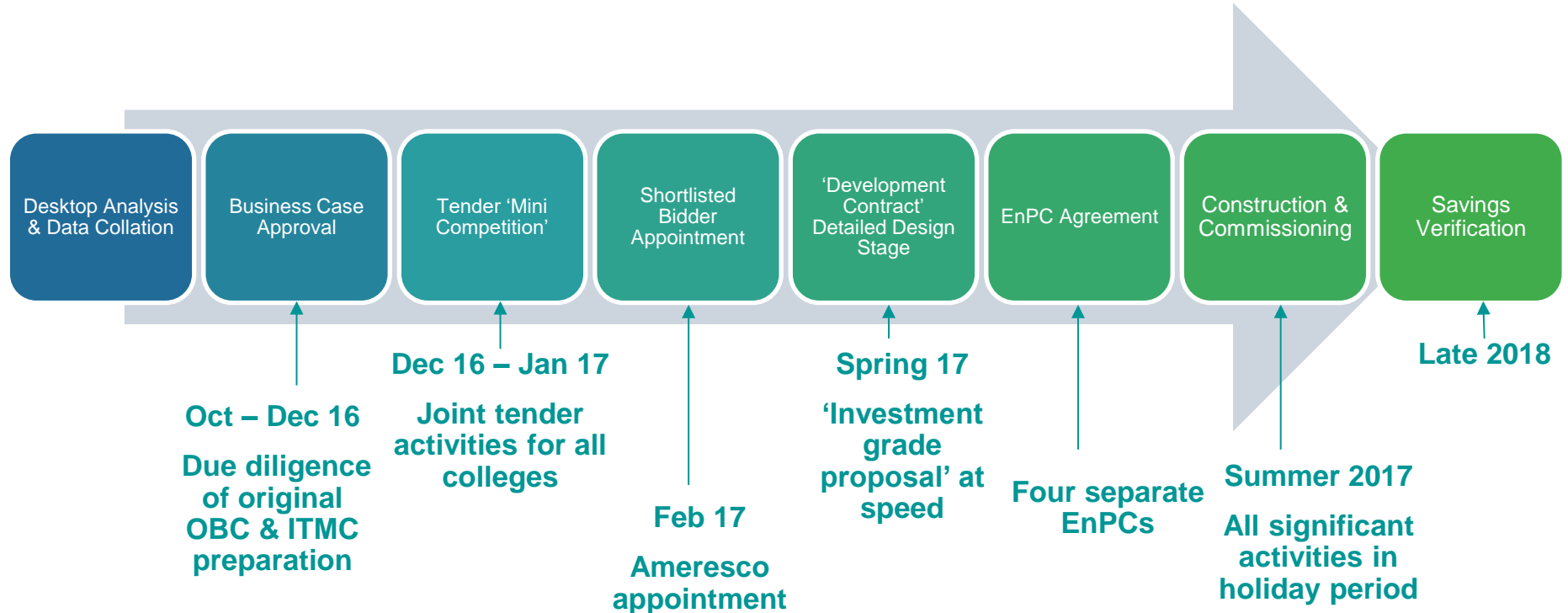


## PSU support thereafter

Supporting delivery under standard NDEEF process and utilising standardised agreements.



# Colleges Energy Efficiency Pathfinder (CEEP)



# Colleges Energy Efficiency Pathfinder (CEEP)



- CHP Installation
- Fuel Conversion
- Boiler replacement
- Transformer tap-down

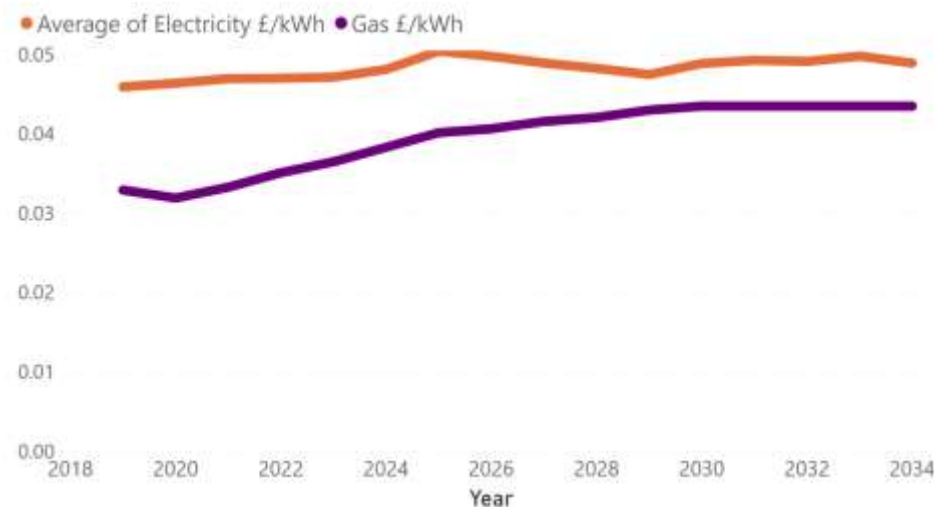
Capital Investment	Guaranteed Avoided Cost	Payback
£ 3,750,000	£ 430,000	8.7 years

- Lighting and controls
- BMS installation and controls optimization
- VSD Installation
- Secondary Glazing



# Future Challenges and Opportunities - Low Carbon Heat

Cost of unit of heat (COP 3 electric heat pump, 90% gas boiler)

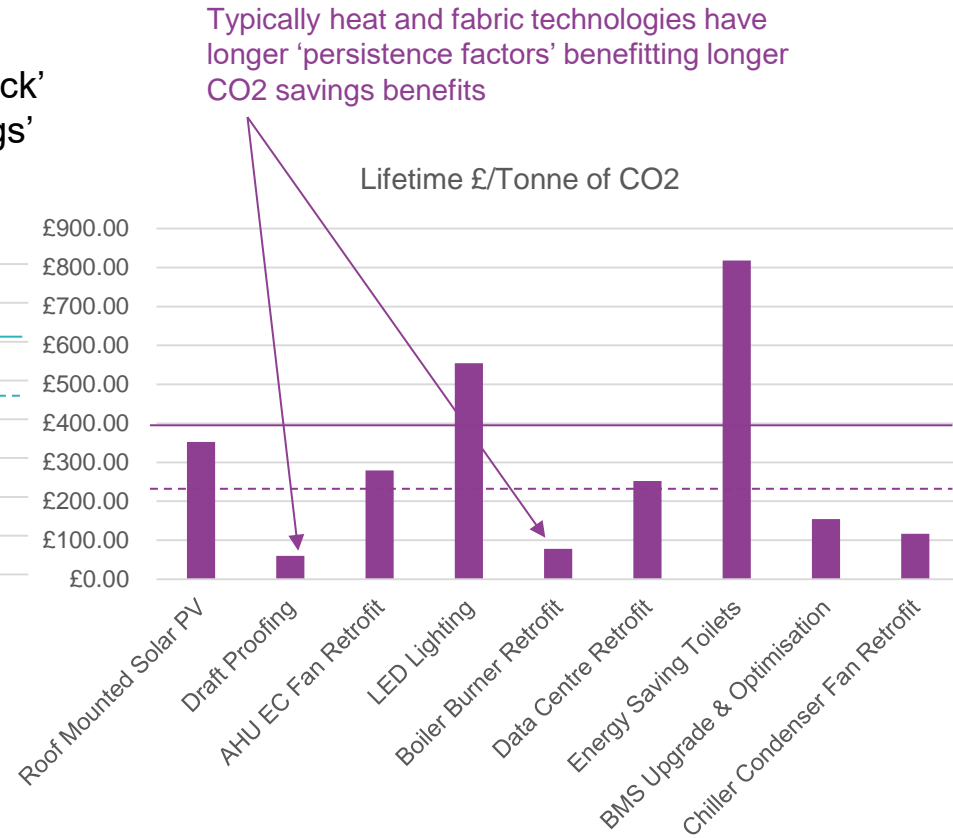
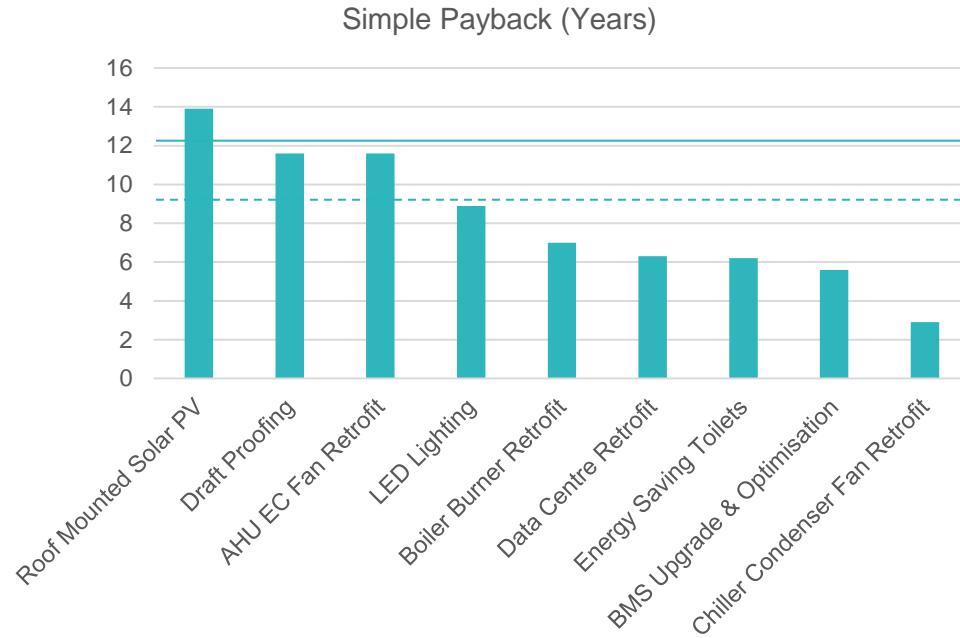


- Whole building approach to balance cost and carbon savings
- Tenders developed to focus on whole life carbon savings



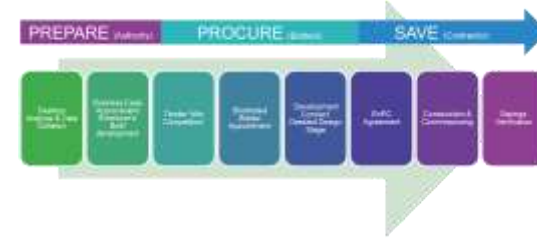
# Differing Commercial Metrics

- Business Cases moving away from 'simple payback'
- Can focus on kWh and/or CO<sub>2</sub> 'guaranteed savings'

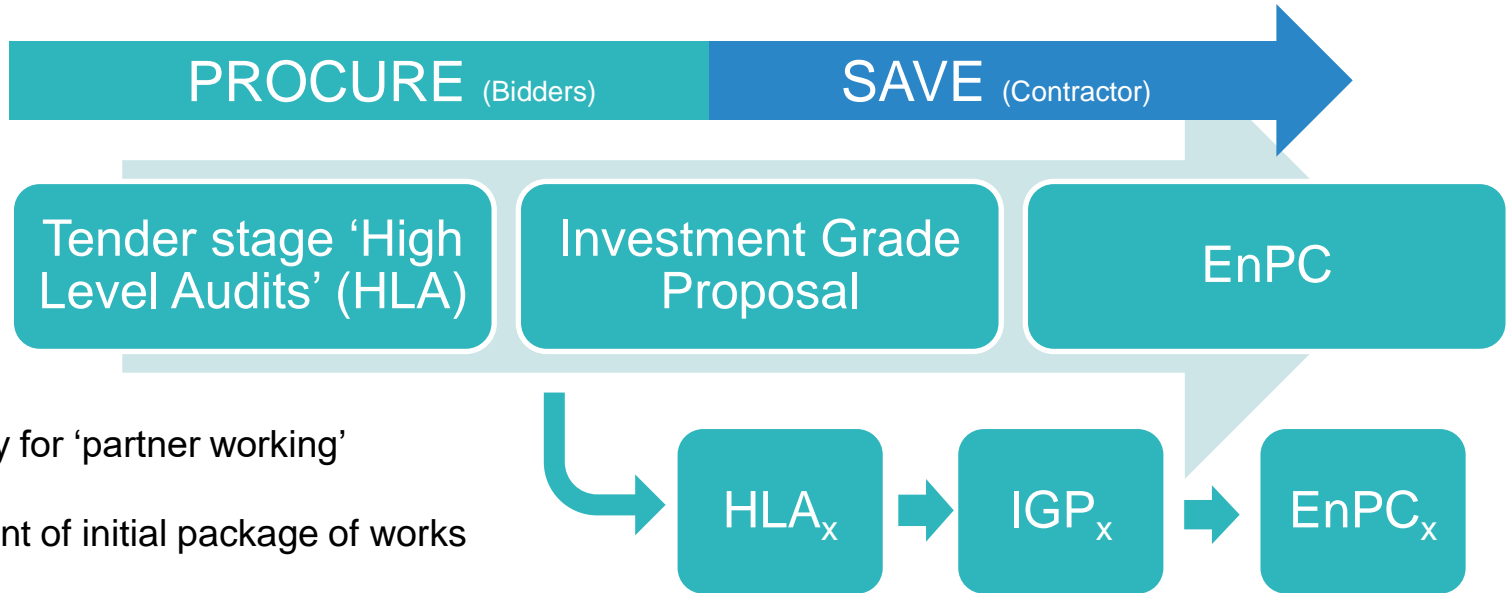


# Future Challenges and Opportunities – Partner Working

- Typical projects focused on procurement of individual package of works
- One tender, one EnPC

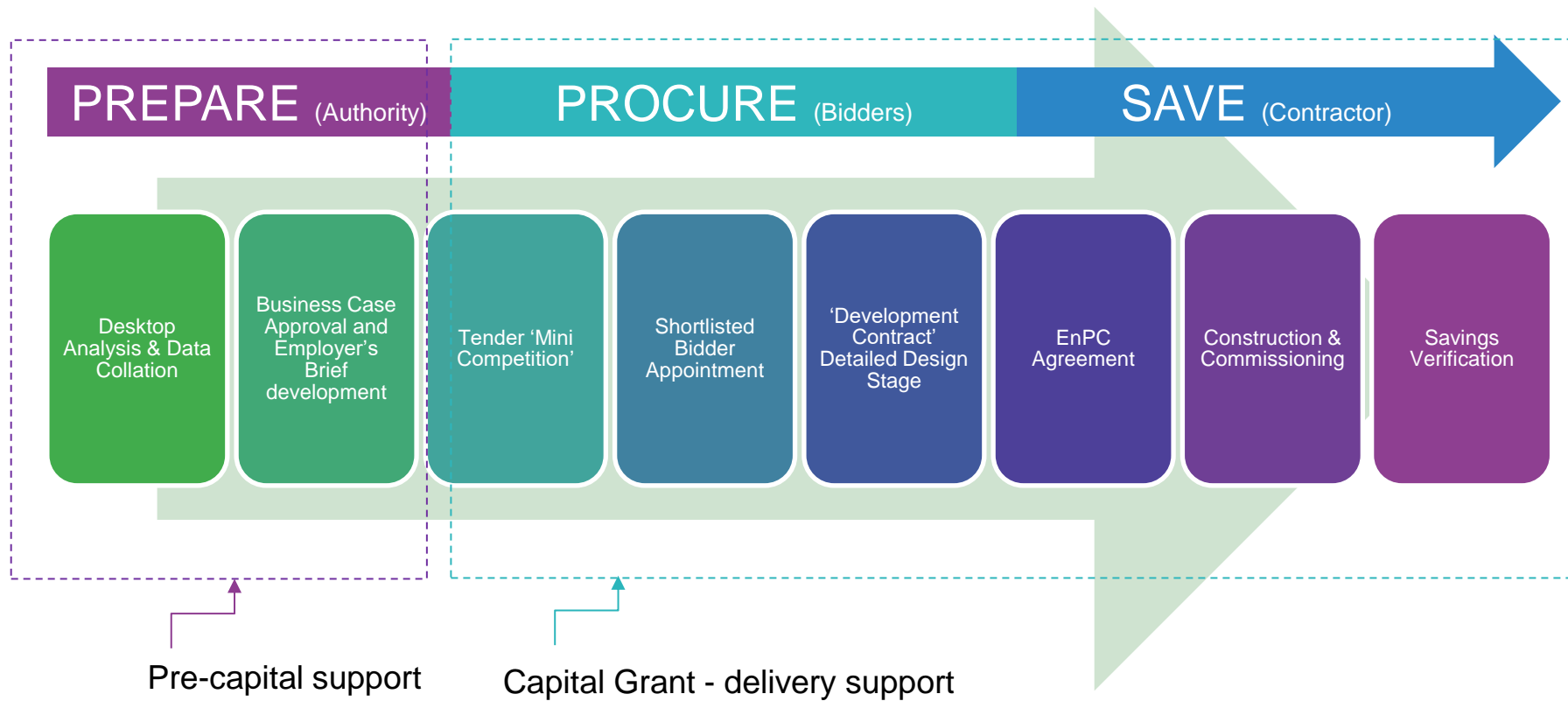


# Future Challenges and Opportunities – Contractor Partner Working



- Opportunity for 'partner working'
- Procurement of initial package of works
- Opportunity to upscale and deliver multiple phases of work under original single procurement
- Reduce procurement activities, time and costs

# Interface with the GPSEDS



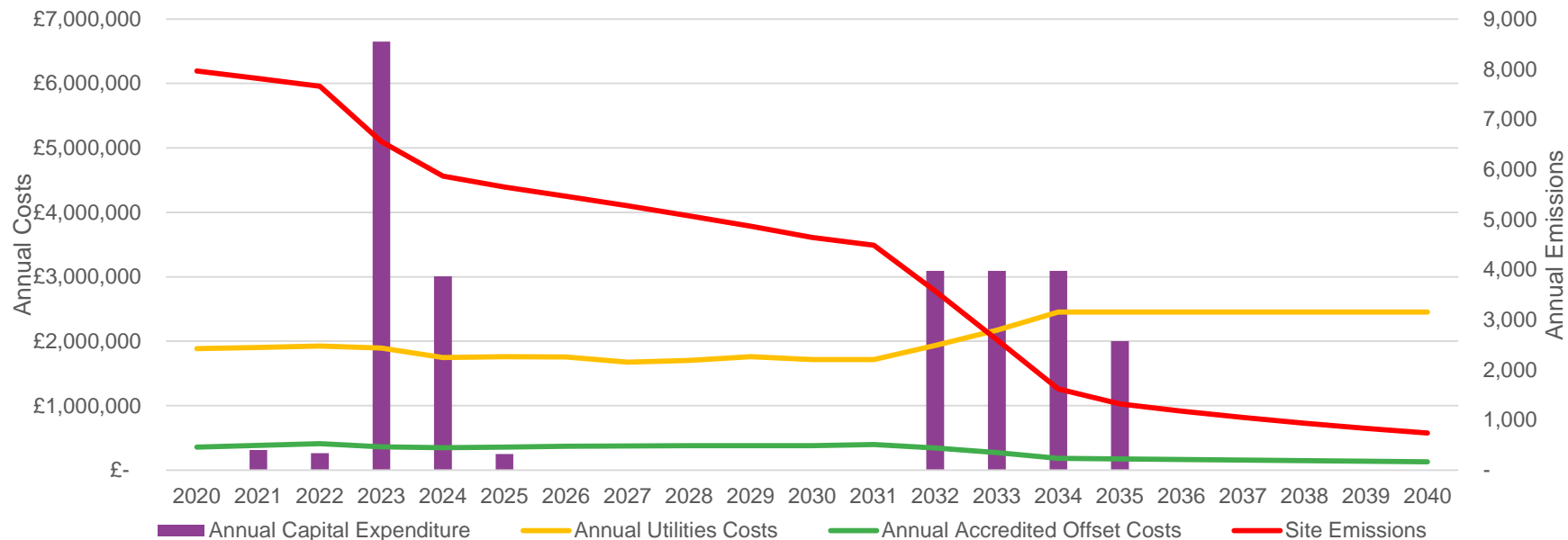
# Interface with the GPSEDS – Pre Capital Support

	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
Sub-Metering Programme	Data gathering Priority setting / benchmarking																			
Energy Audits and Heating Appraisals	Identification of ECM opportunities and innovations																			
	Prioritised investment Heat Network Appraisal Business case development																			
Retrofit Energy Efficiency Programme			Investment in identified priority opportunities Reducing demand Includes site infrastructure such as Street Lighting																	
Onsite Renewables				Initial PV array to offset EV charging										Additional PV array to offset electrified heat			Timing for further innovations to support 'true' net zero position and enhance onsite power resilience			
Decarbonisation of Heat (Heat Pumps)										Decision Date Heating fuel type priority		Heat pump programme Grid substantially decarbonised by this date								
Behavioural Change and Education	Targeted behavioural change programmes to reduce waste					Refresh programmes				Refresh programmes				Refresh programmes					Refresh programmes	
Offsetting			- Offsetting residual emissions in line with RAF and Governmental guidance, once on site emissions sequestration is known																	

## ECM identification and planning

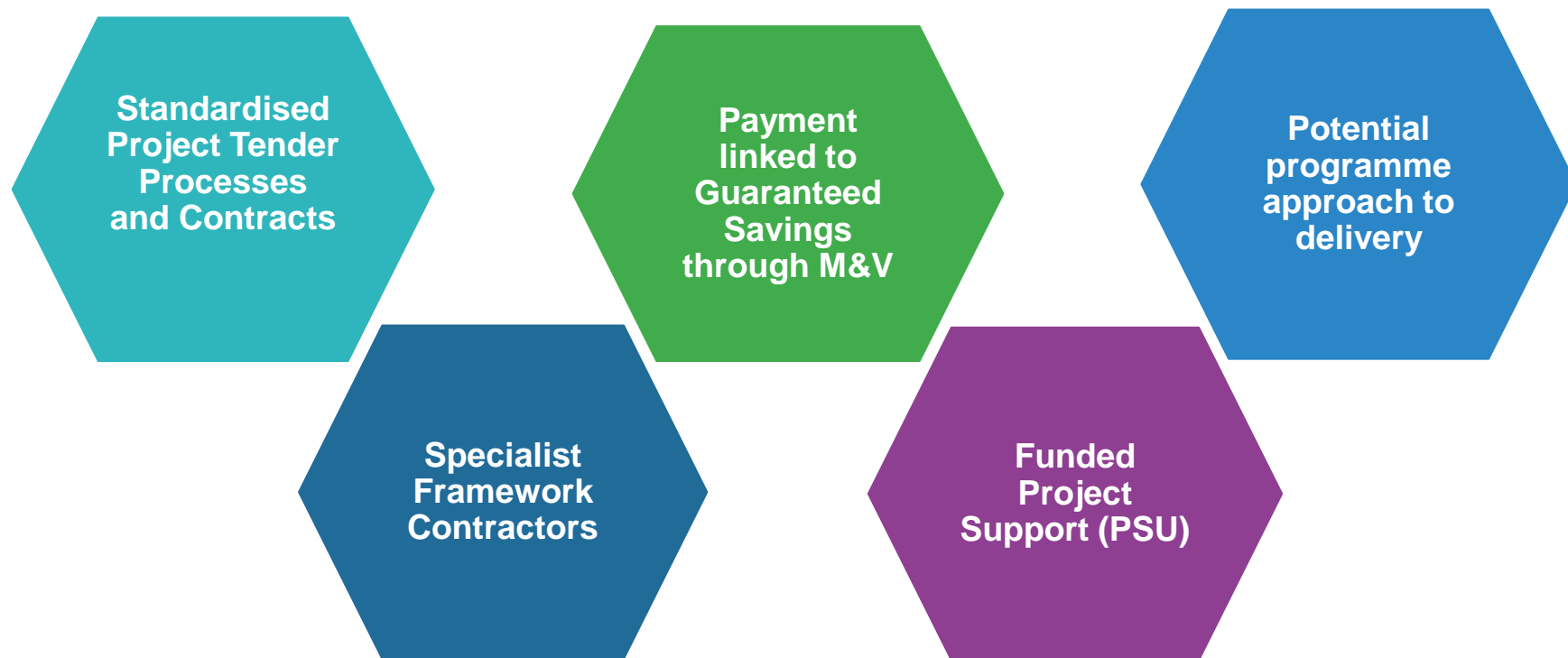
21/10/2021

# Interface with the GPSEDS – Pre Capital Support



Impact forecasting

# Interface with the GPSEDS – Procurement & Delivery Mechanism



# Contact

**NDEE Frameworks Project Support Unit:**

[NDEESupportUnit@mottmac.com](mailto:NDEESupportUnit@mottmac.com)

**Scottish Government's Energy Efficiency Website:**

<http://www.gov.scot/Topics/Business-Industry/Energy/Action/lowcarbon/NDEE>

**NDEE Frameworks Website:**

[SG's NDEE Framework website](#)

# Questions?

Thank you

