



Building a successful UK programme in energy harvesting through standards

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BSI's credentials

- **Experienced:** the world's first National Standards Body established in 1901 and a founding member of ISO
- **Trusted:** established by Royal Charter, reinvesting profits back into our business to improve our clients' experience
- **Independent:** acting in the national interest balancing industry, government, and societal needs and expectations
- **Leading global standards development body:** British, European, ISO, Public, Private
- **Specialist focus:** standards creation, training and certification
- **The UK National Standards Body:** the source of British Standards, members of CEN and ISO
- **Global network:** 70,000 clients in 150 countries worldwide including governments, global brands and SMEs
- **Thought leaders:** Shaped the world's most adopted standards, including ISO 9001 and ISO 14001

A Global Standards Development Organisation

330

Employees in NSB

37,000

Catalogue of standards

2,200

Standards published each year

1,000

Standards withdrawn each year

7,000

Live projects

1,200

Number of committees

10,000

Number of committee members

198

International/European secretariat

95%

International/European work

The importance of separating standards and regulations

Standards

- Voluntary, market-led
- Full stakeholder engagement
- Written by experts
- Open public consultation
- Maintained and reviewed

Regulations

- Minimum legal requirements
- Written by lawyers for Government



STATUTORY INSTRUMENTS

2011 No. 1881

CONSUMER PROTECTION

The Toys (Safety) Regulations 2011

Made - - - -

24th July 2011

Laid before Parliament

29th July 2011



Standards and regulations
How can standards work alongside policies and regulations?



CareQuality
Commission

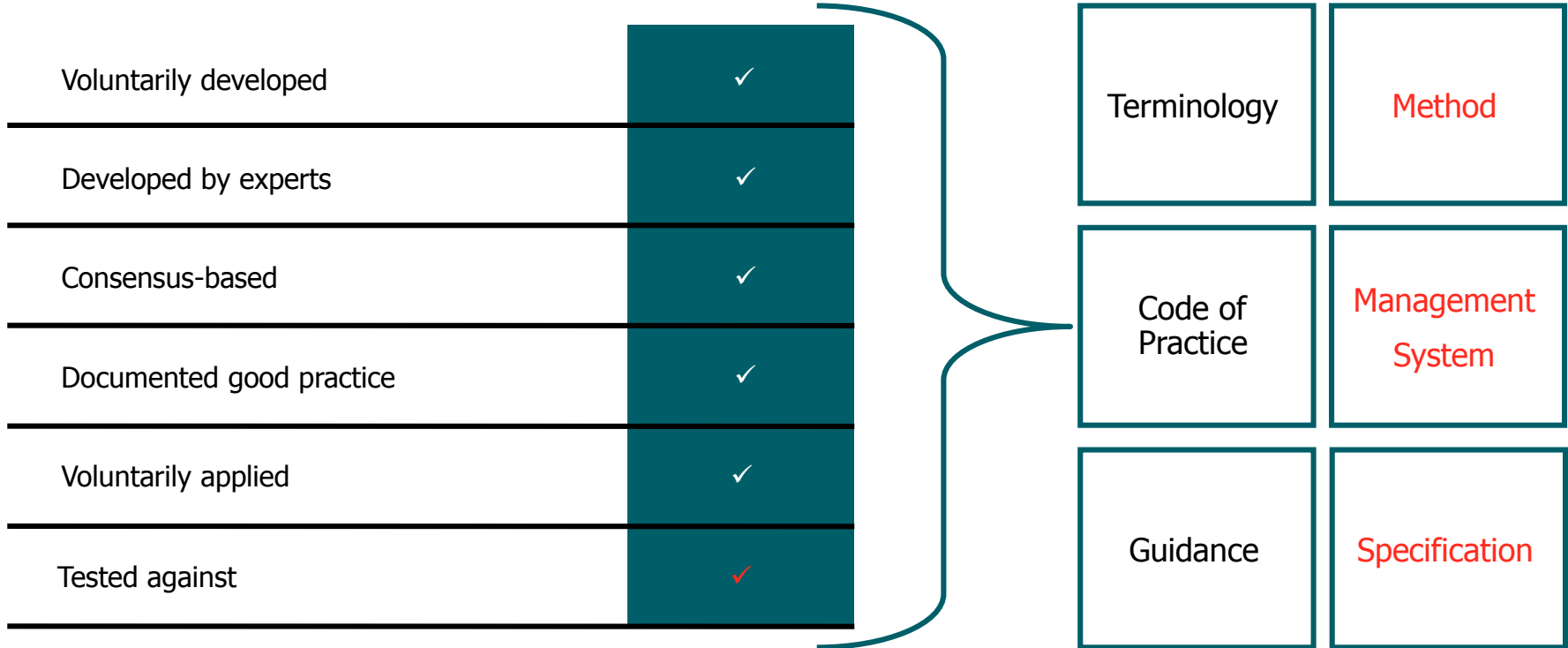


What standards you have a right
to expect from the regulation of
your care home

Harmonization – improving best practice through standardization



What is a standard?



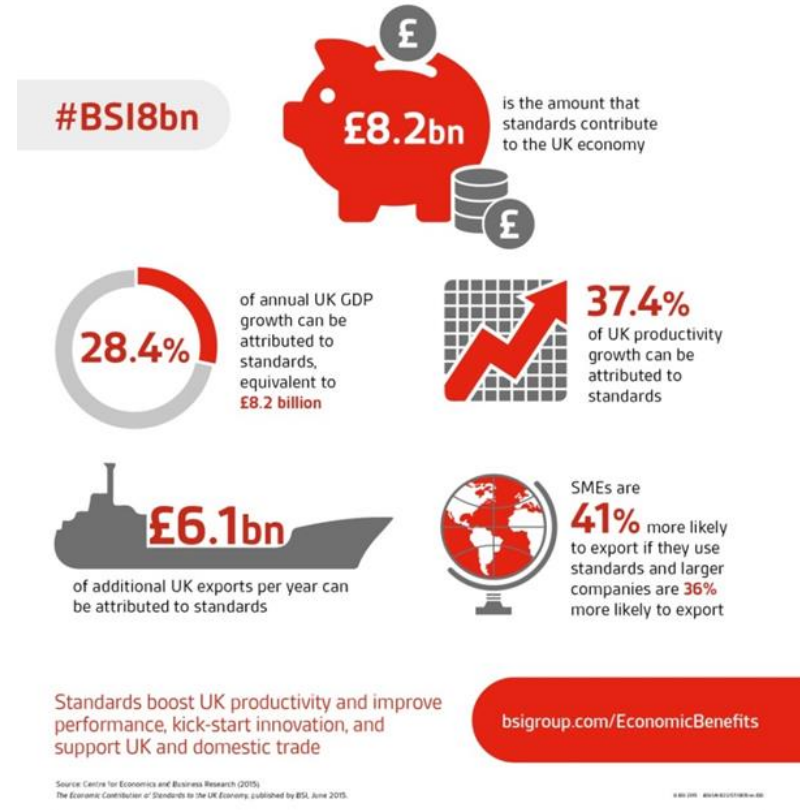
Economic benefits of standards

Independent research undertaken by CEBR published in 2015 shows that standards:

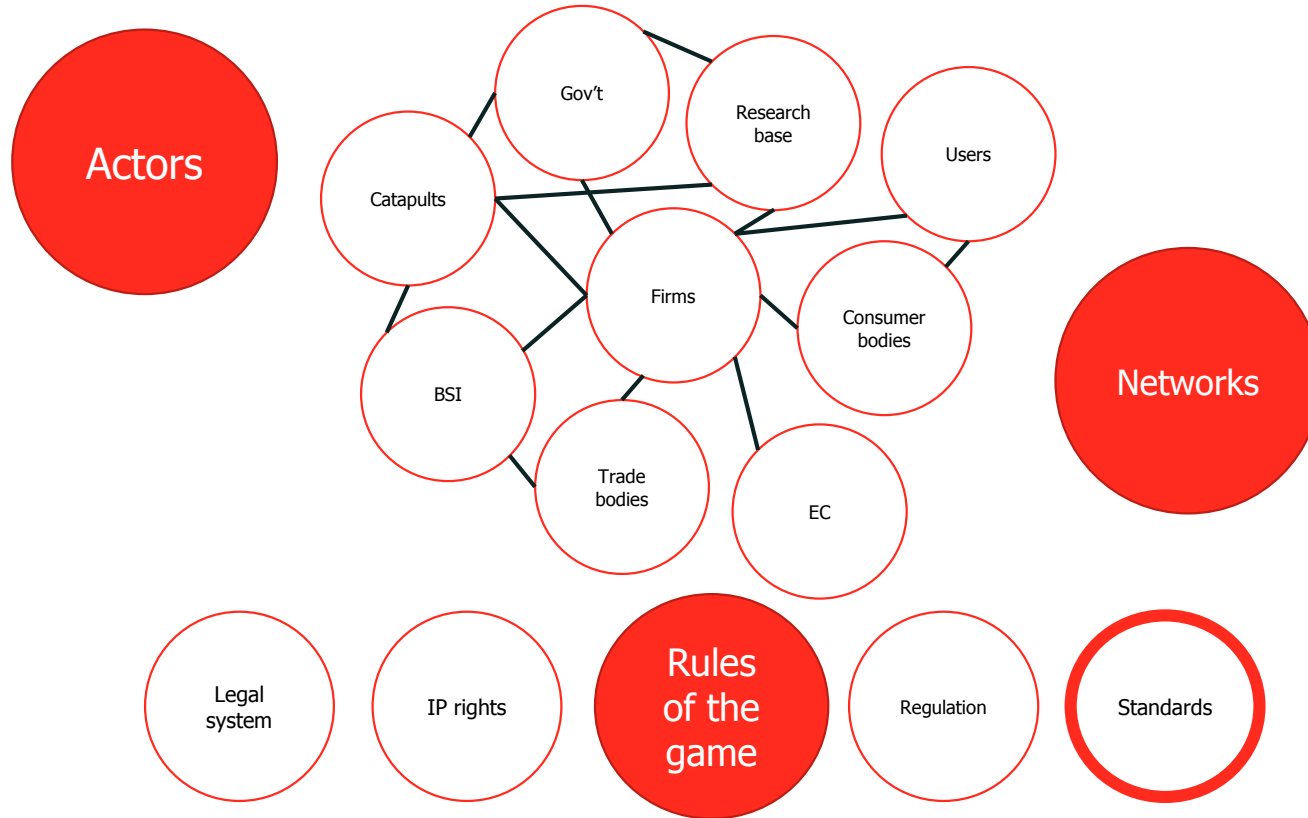
- fuel GDP growth
- support exports
- increase productivity
- catalyse innovation

Other BSI research projects have addressed:

- Standards & Intellectual Property
- Return on Standards Investment
- Standards to Deliver Government Policy
- The UK Quality Infrastructure

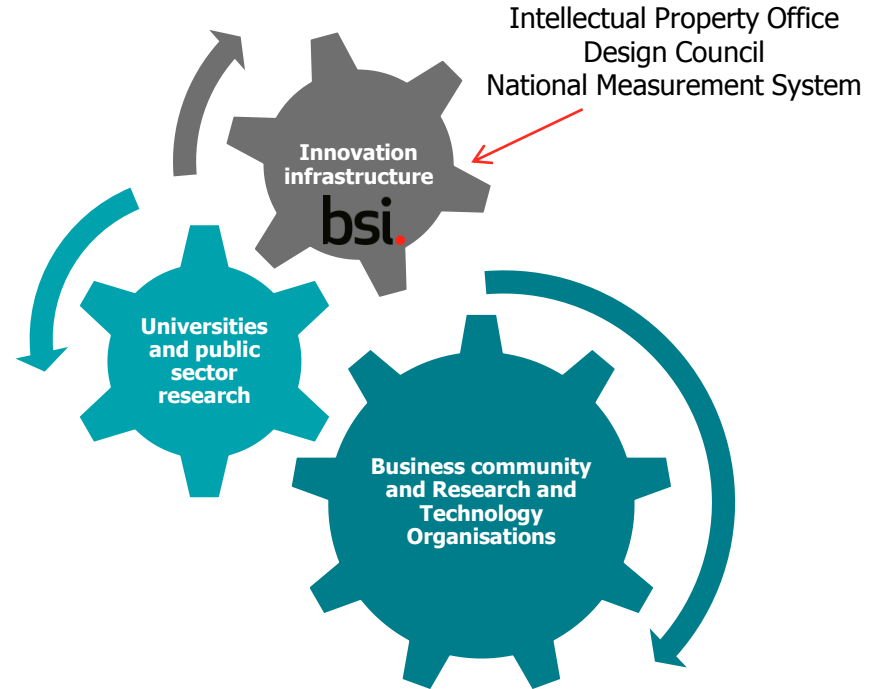


The UK innovation landscape



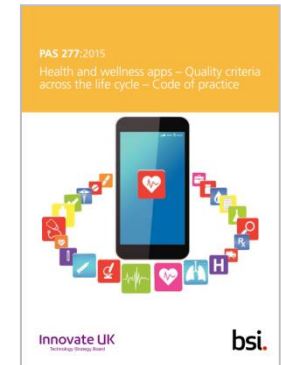
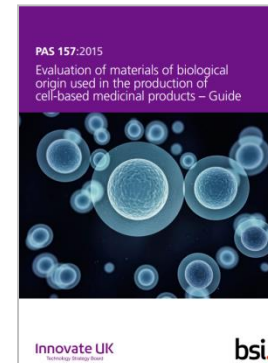
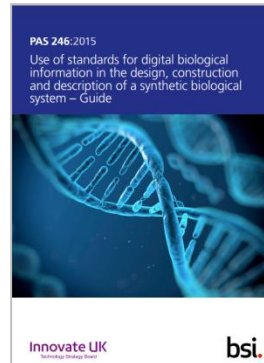
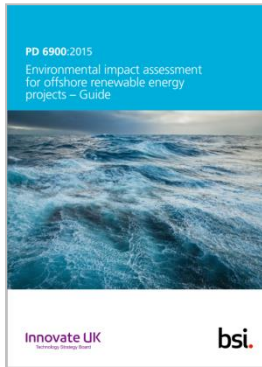
The role of standards in innovation

- Develop economies of scale and efficiency in supply chains
- Avoid technology lock-in
- Diffuse knowledge into the market
- Build public and investor confidence in the technology route map
- Provide a vehicle to enable better stakeholder engagement



Innovate UK – BSI pilot projects

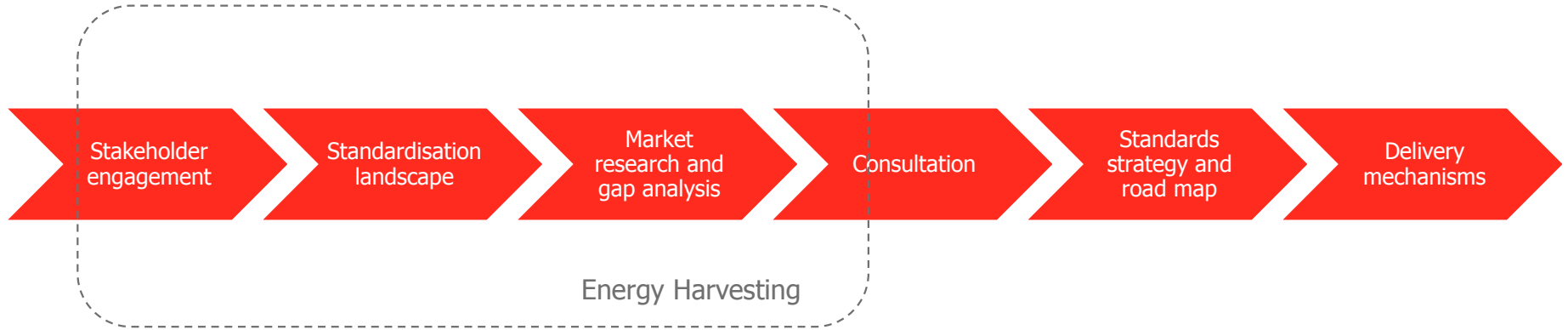
- Focused on key technology areas
- Deliberate choice: different state of maturity and development needs
- Assisted living, digital health apps, offshore renewable energy, synthetic biology and cell therapies



BSI EmTech programme – overview

Manufacturing	Sustainability	Governance & Resilience	Construction
Connected and autonomous vehicles	Circular economy	Big data	BIM Levels 2 and 3
Digitisation of manufacturing	Energy harvesting	Blockchain	Digital Object Identifiers
Financial technologies	Energy storage	Health apps	Offsite construction
Graphene		Internet of Things	
Non-animal technologies		Machine learning	
Smart cities		Unmanned aircraft	
Synthetic biology			

BSI EmTech programme – process



Example: BSI smart city standards strategy

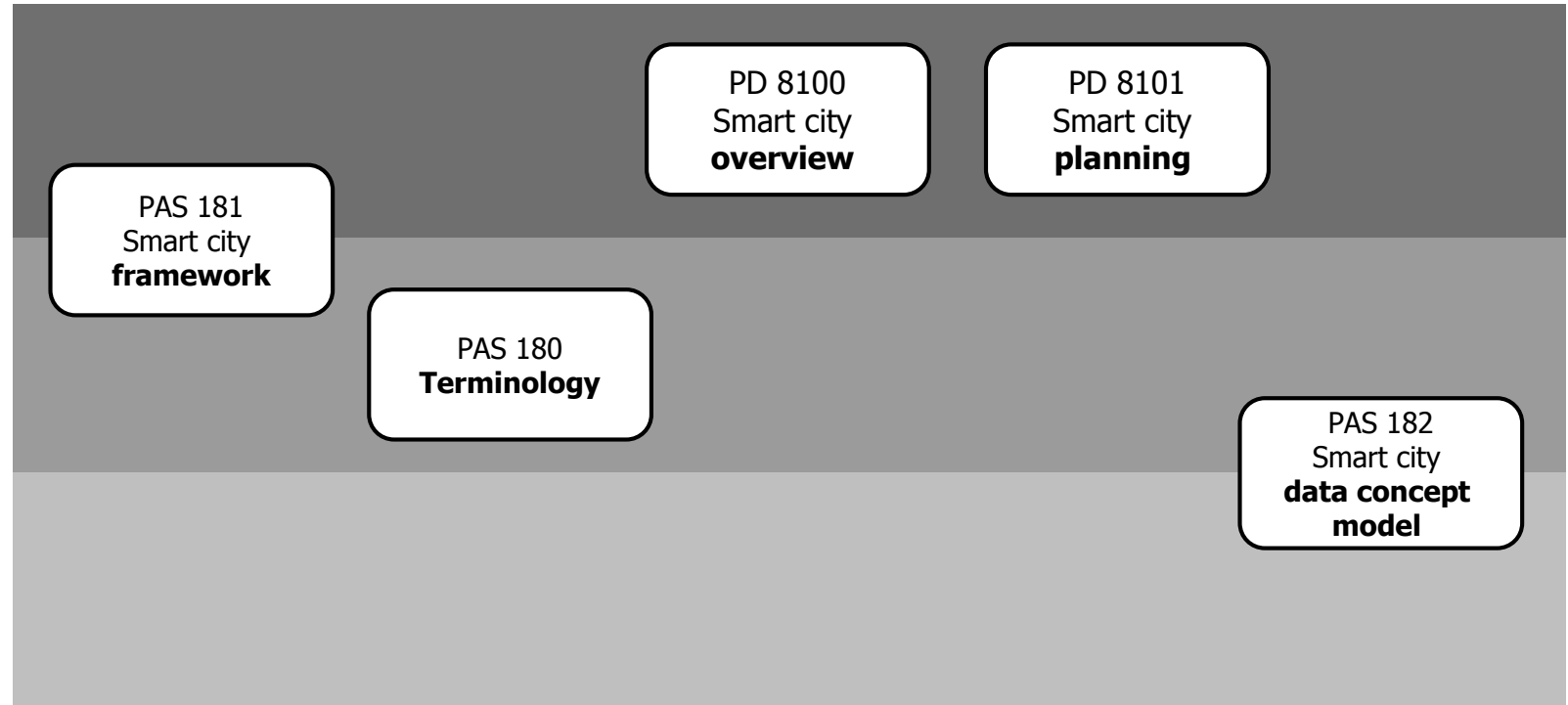
Fast-track and dissemination programme



Feeding into international programmes

BSI SDS/1 Sustainable Development
Co-ordination Committee

Phase 1: initial smart city standards (delivered)

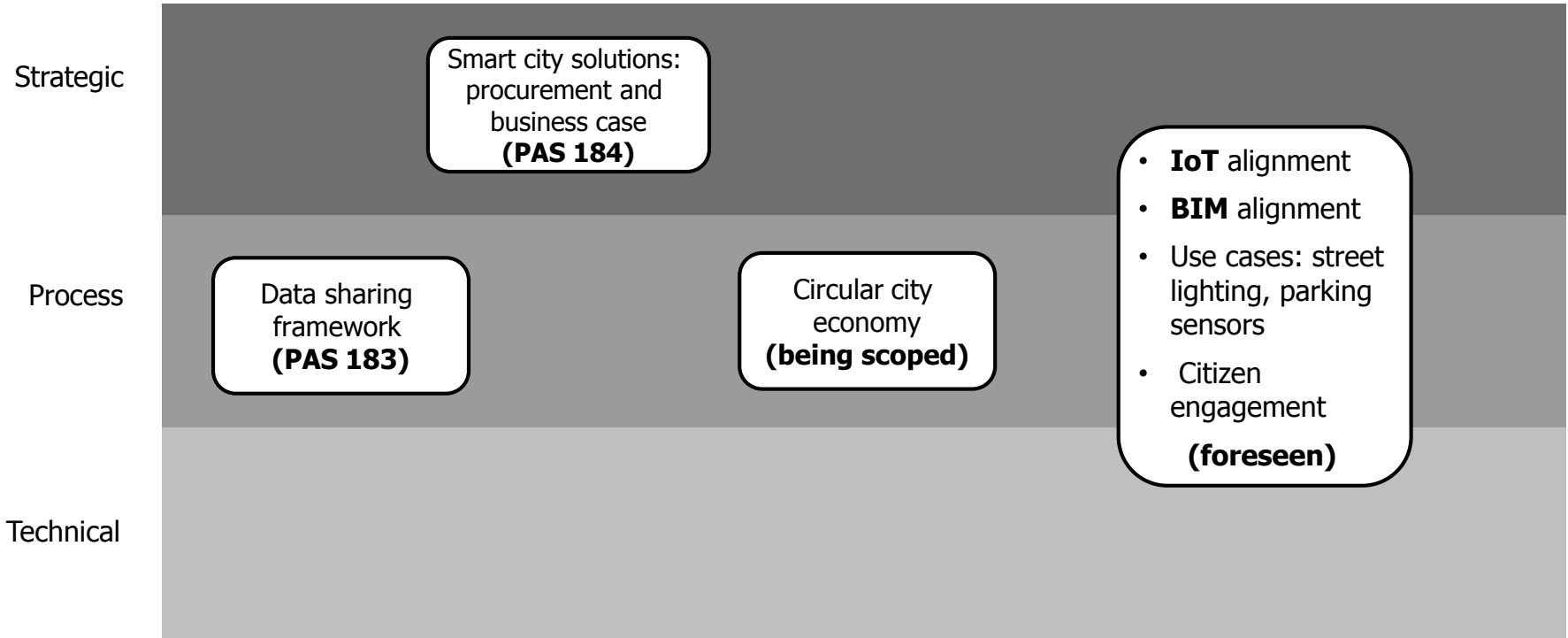


Cities Standards Institute

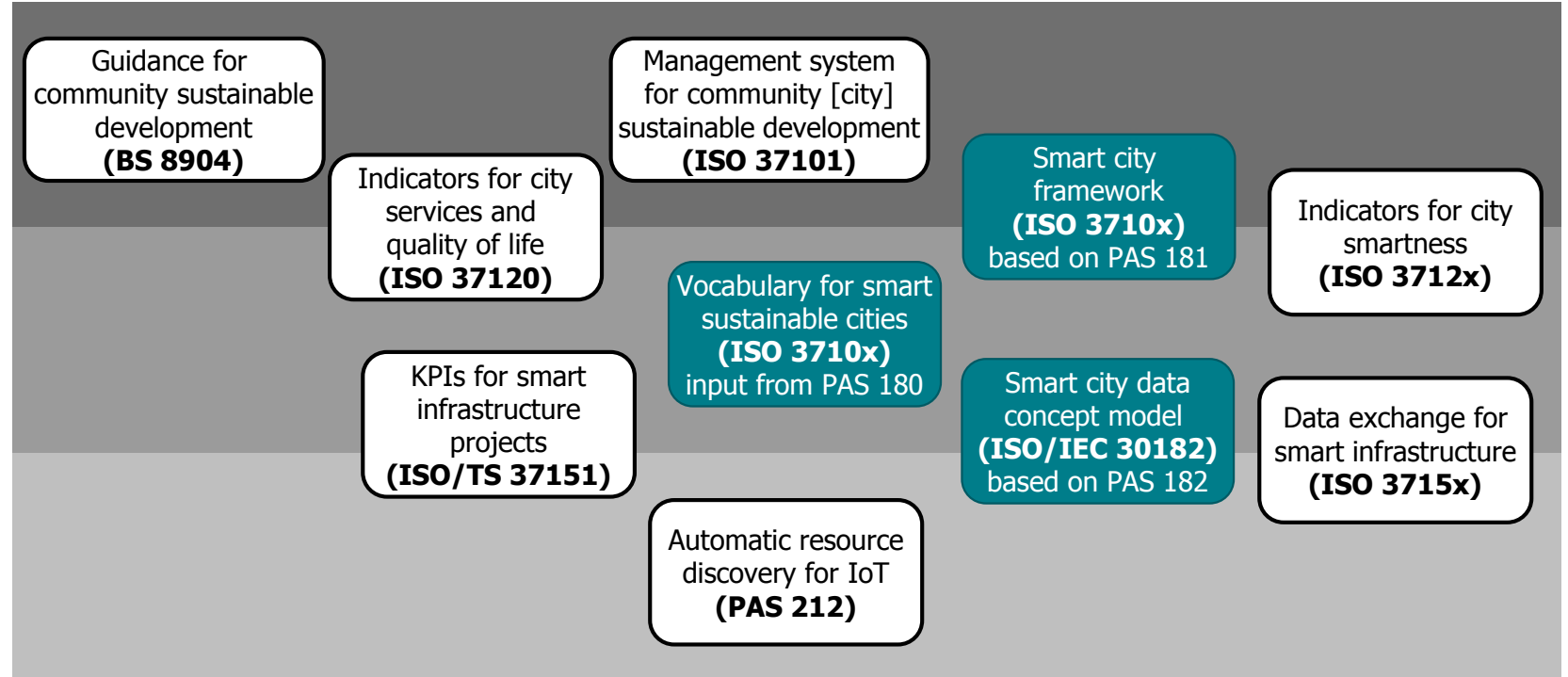
- A collaboration between BSI and the Future Cities Catapult (October 2014)
- A community of good practice for cities, based on standards
- Standards creation to accelerate the development of the future cities market
- Promotion of good practice, in the UK and internationally



Phase 2: smart city standards activity (in progress/foreseen)

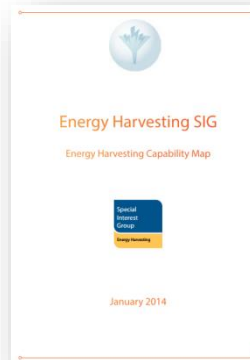


Sustainable cities and communities standards activity



Energy harvesting: background

- In 2011 Innovate UK identified energy harvesting as a key emerging technology with a high market growth and impact potential
- Global energy harvesting market forecast to reach ~U.S. 1 billion by 2022 (ReportLinker, April 2016)
- The EH Special Interest Group (SIG) guidance to assist UK industry in the development and commercialization of energy harvesting
- Innovate UK EH cohort meeting (with BSI) to discuss standards priorities (July 2015)



Energy harvesting: barriers and standardization benefits

Barriers

- Improvement of procedures for quality
- Compatibility of system components
- Agreed performance requirements
- Improved industry access to knowledge and good practice

Standardization benefits

- Ensuring comparability of devices and systems for proper commercialization of products
- Helping in the interoperability of multi-vendor components
- Setting agreed benchmarks for performance
- Providing ways for commercial companies to collaborate in product development and sales

Potential areas of focus for EH standards development?

- Demonstration of plug and play capability
- Demonstration of long-term capability/reliability
- Development of figures of merit to enable inter-comparison between different EH technologies, including batteries and other types of storage components
- Interoperability
- Big data and data security standards

Energy harvesting: how can BSI help?

- Developing a sound standards infrastructure to help increase the competitiveness of the UK EH industry.
- Building a comprehensive map of current standardization activities, key players, supply chains and impact areas for EH.
- Enabling the EH community to access standards knowledge with ease, leading to better understanding of how relevant standards can benefit individual organizations and the whole community.
- Identifying where standards development activities are not yet in place, consequently developing plans to fill knowledge gaps through appropriate projects.
- Achieving consensus on market development priorities, immediate action points and a long-term standards strategy.
- Channelling UK input on EH into international standardization activities (e.g. ISO, IEC, CEN, CENELEC).

Thank you!

Any questions?

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