THE "HUMBLE LAMPPOST"
KICK-OFF EVENT — 3ʳᴰ DEC'14
BRIEFING & 'HOMEWORK'

Commitment #6670
http://eu-smartcities.eu/commitment/6670

Smart Cities & Communities
European Innovation Partnership

THERE IS CLEAR VALUE FROM IMPLEMENTING SMART STREET LIGHTING ACROSS EU CITIES

60-90m Estimated nos. streetlights across Europe

75% Percentage of streetlights over 25yrs old

20-50% Proportion of city's energy bill from streetlights

€3 bln Approx. annual street lighting energy cost

50-75% Energy saving potential thru SLL/LED
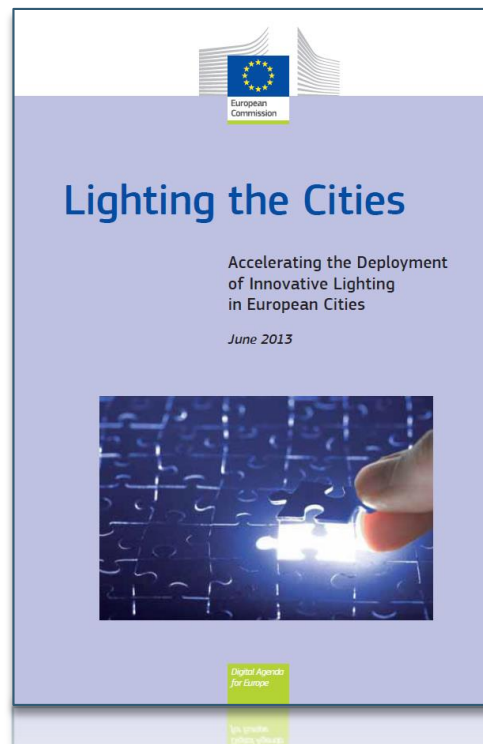
€1.9 bln Annual energy saving from SSL/LED

2.6 mln GHG equivalent in removing nos. cars from EU roads

The European Union has set itself the ambitious target of increasing energy efficiency by 20% by the year 2020. Lighting accounts for about 50% of the electricity consumption in cities. European cities can therefore play a major role in the reduction of the carbon footprint by large-scale deployment of highly innovative and eco-friendly LED lighting solutions.
Commissioner Neelie Kroes, June'13

European Commission

Lighting the Cities

Accelerating the Deployment of Innovative Lighting in European Cities

June 2013

Digital Agenda for Europe

Factors driving the adoption of Intelligent SSL in cities

- Need to reduce costs for public service provision
- Significant (up to 70%) energy savings and extended luminaire lifetimes
- Better light quality and visibility and less light pollution
- Greater lighting design creativity and functionality
- Improved street safety and security
- Increasing urbanisation will require higher levels of sustainability
- Networked lighting will form an integral part of the future Smart City

THE 'HUMBLE LAMPPOST' EIP COMMITMENT IS STARTING A MOVEMENT

"10 Million Smart Lampposts across EU Cities"

Reinforcing the EIP Goals:

➢ **Proven technology**

➢ **Scale**

➢ **Accelerate**

➢ **Impact**

➢ **Common Solutions**

➢ **Integrated Approach**

➢ **Collaboration**

- 25 committed organisations from 7 EU countries (including 8 Sherpa Organisations); with an additional 20 commitment leads seeking to join – in total over 100 organisations

- Cited by Commissioner Kroes, and the EIP Hi-Level Group as an important EIP "Quick Win".

- HLG Champion is Annemarie Jorritsma, Chair CEMR; NL Association of Cities & Mayor of Almere

- Broad representation from leading global lighting Industry, major regional energy providers, academia and not-for-profit – and cities / city networks

- Goals to:
  - Deliver fast significant financial savings, and GHG reductions
  - Multi-purpose the lampposts, to capture additional benefits (air quality & noise monitoring, wifi, CCTV, traffic monitoring)

- Led by two Sherpa organisations: **UrbanDNA** innovate incubate accelerate [ui!] the urban institute®

THE COMMITMENT WILL DELIVER VERY REAL BENEFITS

➤ *Trusted designs*: provide a number of frameworks that can help improve designs (services / technical / business model) based on the synthesized experience of other cities. Notionally three 'on-ramp' template packages are envisaged that can be used to fit different maturity / ambition of cities

➤ *Innovation*: bring to the table ideas, and 'in-process' or completed innovations from other places (a number of intriguing innovations are already evident); engage leading global suppliers / provides

➤ *Access to funds; financing packages and business models*: an important aspect of the initiative will be building some funding packages; providing access to funds from financiers that will help offer 'no-capital-outlay' routes for cities (enabling rapid and full replacement of lighting estate); and offer useful thoughts and designs on business models that work.

➤ *Build confidence of decision makers*: notably through the likes of the *socio-economic value case* that others have delivered; and the challenges that they have already resolved in delivery

➤ *Better deals*: scale will improve the deal. Even a decent sized city on its own cannot significantly influence the market. The EIP level however should do. If we can aggregate demand in appropriate city maturity clusters, we can arrange better terms for the acquiring cities, on loan, pricing, technical, etc.

➤ *Speed the process*: the above should all lend itself to a swifter implementation within a city, reducing the current lengthy time it takes to research the market; design; procure and implement.

➤ *Future proof solutions*: the framework that are developed will allow cities of all sizes and levels of maturity/ambition to move up to the next level without having to replace infrastructure: particularly important as one moves from lighting to other associated services that lampposts can enable (wifi etc).

SOLID GEOGRAPHICAL COVERAGE — AND PLENTY OF SCOPE FOR MORE!

(Sco) SCA

Arup
Amey

Glasgow

Arkessa
SilverSpring
UrbanDNA

Cork

DSA
Almere
Philips   Eindhoven
Alliander
The Hague

London Borough
of Greenwich

Connectivity Alliance

RheinEnergie
EnBW

Bosch
Urban Institute
Schréder Group
Weislock

Orange

Schneider Electric   ABB Schweiz

Torino
IRE Spa

ENEA

Sabadell
Luxintec

Cedint   Europoles   Trento RISE

ISA sensing   SiTI

Terrassa   Uni (Navarro   Euroimpresa   Nea Ionia, Athens
Algorab

Santander   Barcelona

Use National Smart City Lead Depts & City Associations to enrol more cities.
Enroll regional Industry & SMEs.

13-Nov-14

MOST NECESSARY STAKEHOLDER GROUPS ENGAGED

Lighting Systems Manufacturers

Cities

Implementation / Maintenance Providers

Power Supply Cos

MESH TRANSCEIVER
Transmits and receives data from a central receiver and poles, forming a street-level network.

SMART-GRID LIGHTING
Provides on-demand light levels; batteries keep post active if disconnected from the grid.

DIGITAL STREET SIGN
Can be used for advertising, traffic direction, or preprogrammed emergency guidance based on sensor data.

MAIN ST

ROAD CLOSED USE ALT ROUTE

SPEAKER
Delivers music or communicates alerts across the network or to a specific post.

DIGITAL SIGNAGE
Can change messages to reflect planned or unplanned events.

EMERGENCY LIGHT BUTTON

SENSORS
Can detect chemical, biological, or nuclear materials in the air, while seismic monitors warn of earthquakes.

WATER DETECTION
Real-time data on water levels; useful in flood-prone areas.

Intellistreets System

Ordered by: Philadelphia and Chicago
Cost: $1000 to $2000 (not including lamp posts). Price varies by options.

Extended Service Providers

CCTV/Traffic Air Qual/ WiFI

Sensing

Academics Advisors Gov't Agencies

Funders

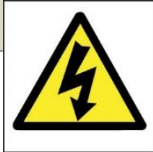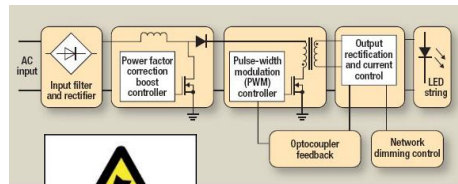**ICT System Providers**

WE MUST DESIGN BUSINESS MODELS & FINANCE PACKAGES TO INCENTIVISE ADOPTION
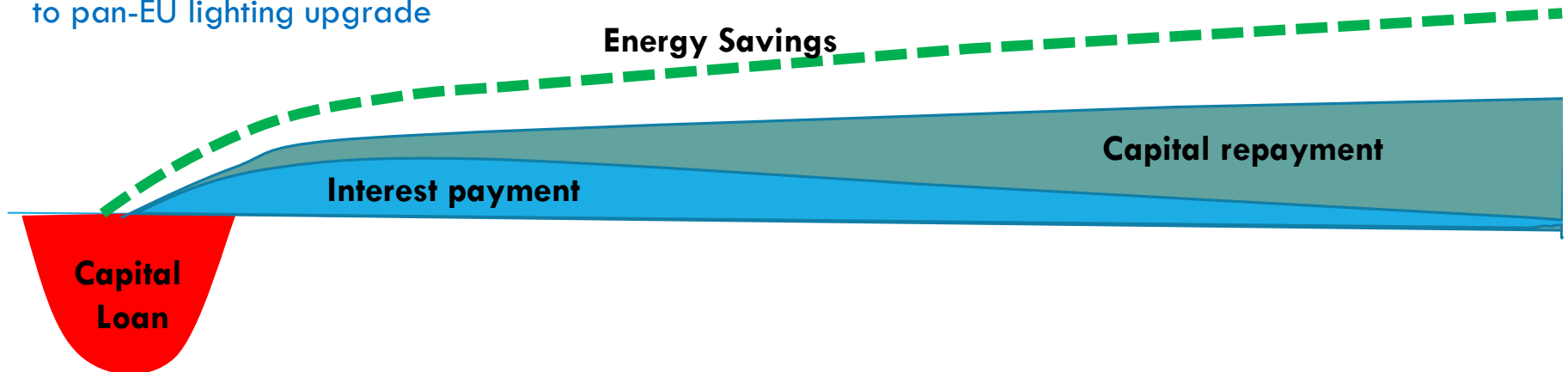
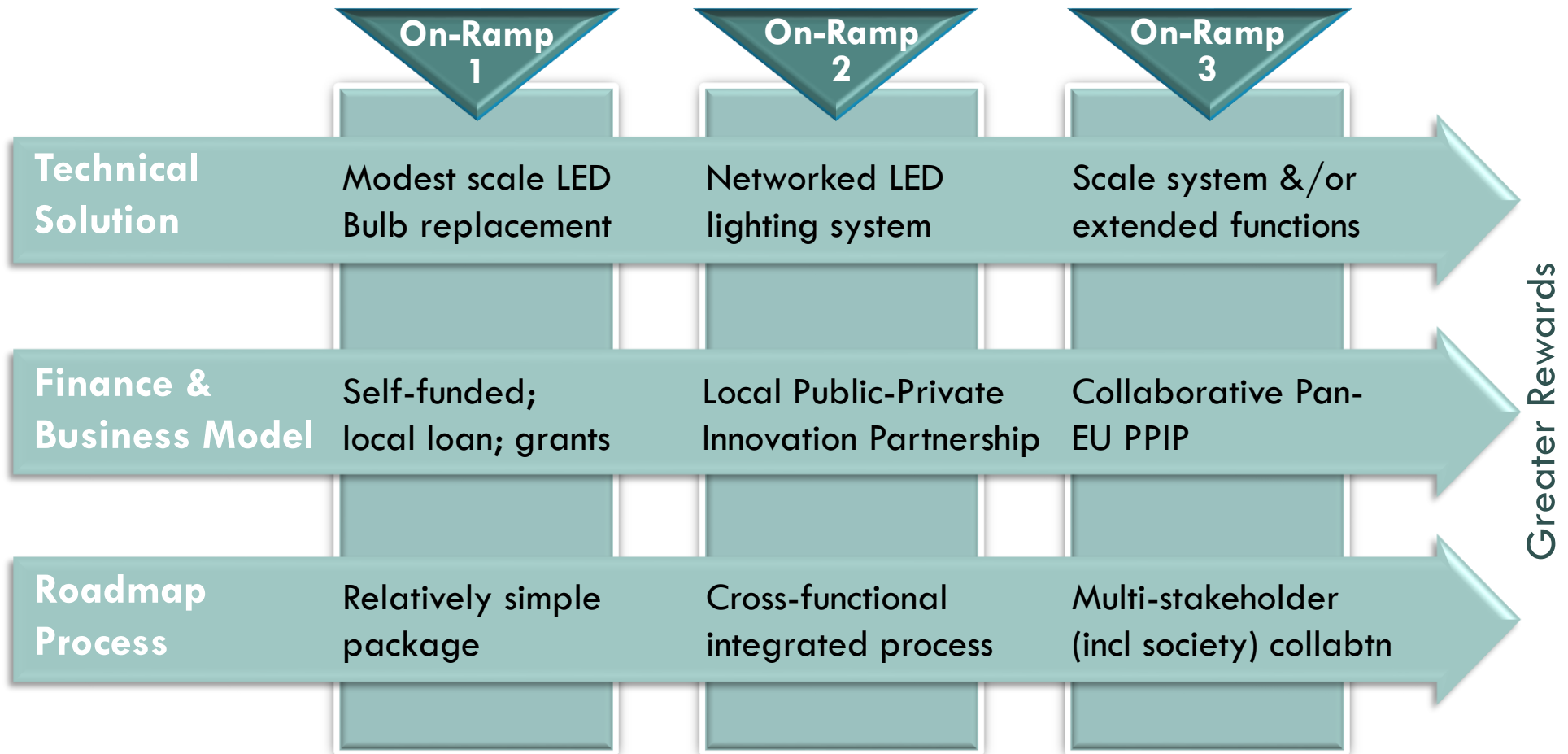**Addressing several funding options:**

- Cover from city operational budgets

- Capital project allocation

- Performance contracting

- Set up of Energy Service Company

- Private Finance Initiative

Treatment of capital and operational budgets; across various city agencies; &/or with external Industry or funding partners all requires careful consideration

Our ambition is to aggregate demand, and engage lenders to develop a financing package that offers zero up-front investment from cities, based on demonstrated energy savings – to bring scale and pace to pan-EU lighting upgrade

Energy Savings

Capital repayment

Interest payment

Capital Loan

THREE 'ON-RAMPS' TO SUIT DIFFERENT CITY'S MATURITY & AMBITIONS

	On-Ramp 1	On-Ramp 2	On-Ramp 3
Technical Solution	Modest scale LED Bulb replacement	Networked LED lighting system	Scale system &/or extended functions
Finance & Business Model	Self-funded; local loan; grants	Local Public-Private Innovation Partnership	Collaborative Pan-EU PPIP
Roadmap Process	Relatively simple package	Cross-functional integrated process	Multi-stakeholder (incl society) collabtn

Greater Rewards →

All built around a common 'architecture' so that cities can advance with confidence

PROJECT PHASES

1. **EIP Commitment Kick-Start** → Q4'14
   - Establish ways of working that both support rapid action, and provide a basis for sustained operations of the initiative

2. **Concept / Business Case** → Q4'14-Mid'15
   - Mobilise demand-side and supply-side stakeholders to pragmatically collect information; develop tools; establish the case; outline designs in order to make rapid progress

3. **"Quick Start" Proof of Concepts** → Q1'15-end 2015
   - Identify cities that will work collaboratively with other cities and Industry to implement common solutions to prove initiative 'tooling' works and can scale.

4. **Knowledge Sharing & Engagement** → Q3'15-2016+
   - Actively communicate designs, gains, possibilities through all available channels to a wide spectrum of stakeholders, notably cities across Europe
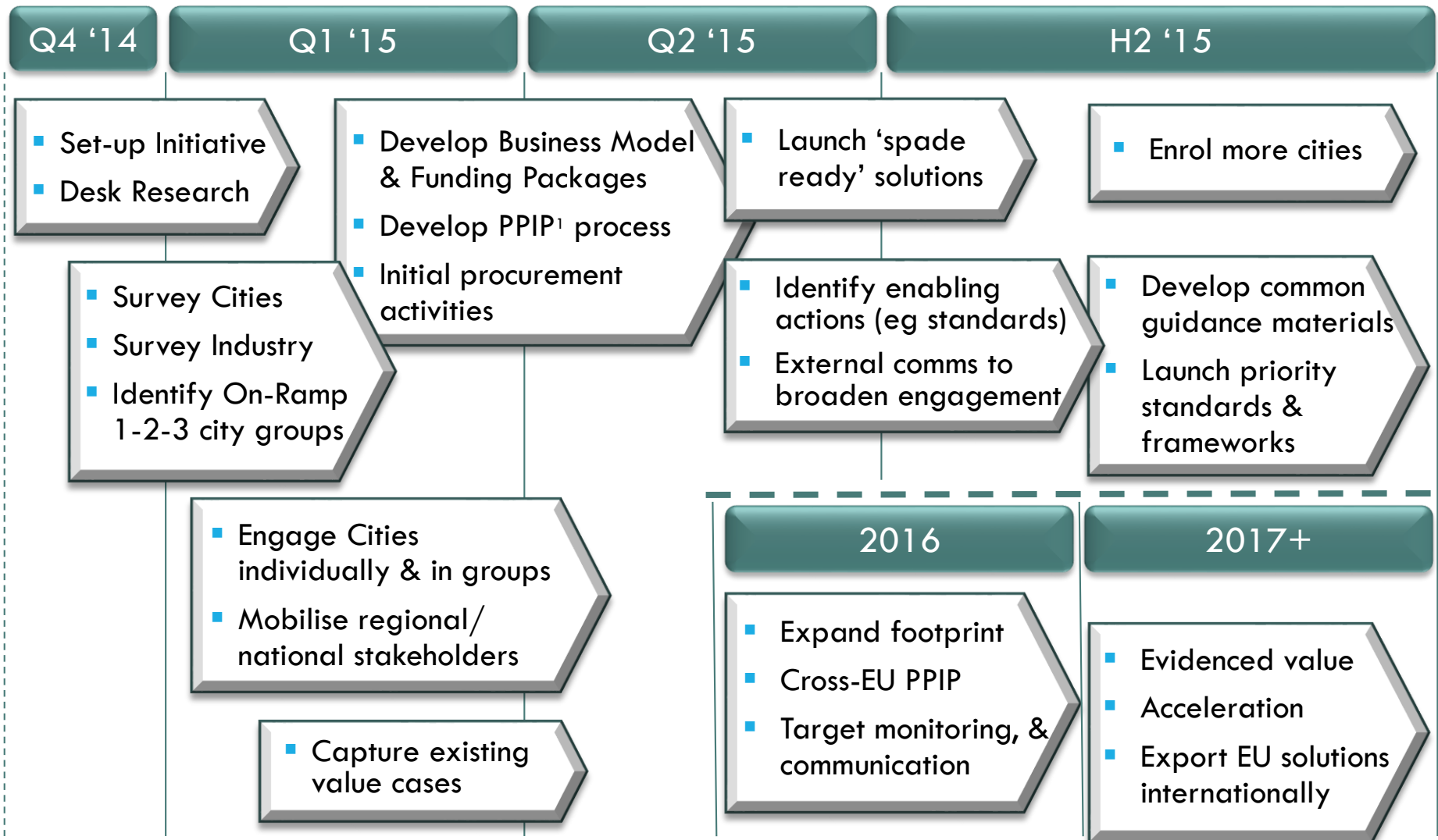
5. **Exploitation & Scale-Out to 10 million target** → 2016 on
   - Set in place the means to accelerate scale out of common solutions across Europe
   - Seek opportunities to export EU solutions to RoW

Exploit other EC projects & Initiatives: Concerto Platinum, eeMeasure, Standards

THE HUMBLE LAMPPOST

THE EIP OUTLINE PLAN WILL BE AGILE TO ALIGN WITH EMERGING ACTIVITIES IN THE MARKET

Q4 '14	Q1 '15	Q2 '15	H2 '15

Q4 '14
- Set-up Initiative
- Desk Research

- Survey Cities
- Survey Industry
- Identify On-Ramp 1-2-3 city groups

Q1 '15
- Develop Business Model & Funding Packages
- Develop PPIP[1] process
- Initial procurement activities

- Engage Cities individually & in groups
- Mobilise regional/ national stakeholders

- Capture existing value cases

Q2 '15
- Launch 'spade ready' solutions

- Identify enabling actions (eg standards)
- External comms to broaden engagement

H2 '15
- Enrol more cities

- Develop common guidance materials
- Launch priority standards & frameworks

2016	2017+

2016
- Expand footprint
- Cross-EU PPIP
- Target monitoring, & communication

2017+
- Evidenced value
- Acceleration
- Export EU solutions internationally

PPIP – public private innovation process

TO MOVE THE "QUICK WIN" FORWARD WE NEED A FAIR AND EQUITABLE 'INPUT / OUTPUT' EQUATION

Stakeholder	City	Funder	Industry	Academic / NfP	...& YOUR ORGANISATION?
Driver	Service quality. Reduced costs. Speedy delivery. Trusted solutions.	Shareholder return. Investment Policy. De-risked RoI.	Shareholder return. Market Growth.	Insight & Data. Test sites.	
Get from Commitment	Packaged trusted component-based solutions.	Clients. Investment-ready packages.	Common design. Partners. Market access. Revenue.	Data. Research Projects. Methods.	
Give to Commitment	Site. Resource. Public funds. Experience.	Funds. Advice.	IP / Asset. Resource. Funds.	Resource. Research. Methods.	
Suggested Minimum EIP Input	Site/%age of lamps. Case study.	TBD Advice & ...	TDB Kick-start funds...	TBD	

HOMEWORK

Organisation: _____

Type: _____

Location: _____

Contact Name: _____

What is *essential* for this initiative to be successful?:

1.

2.

3.

For Each Stakeholder For each phase	Input (what can you contribute?)			Output (what do you seek to get back?)
	IP / Asset (site)	Time	Funds	
Asset Building (creating the design and solution packages)				
Implementation (initial proof points)				
Exploitation (scale pan-EU roll-out, and beyond EU potentially)				

Commitment & SCC EIP Integrated Infrastructure
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THANK YOU!

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