High Quality Studies to support the Activities under the Eastern Partnership (HiQSTEP) – Building solar PV study

Update on progress

16th Meeting of the Eastern Partnership Platform 3: Energy Security, Brussels, Dec 20, 2016

Kantor Management Consultants

In partnership with:

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HiQSTEP

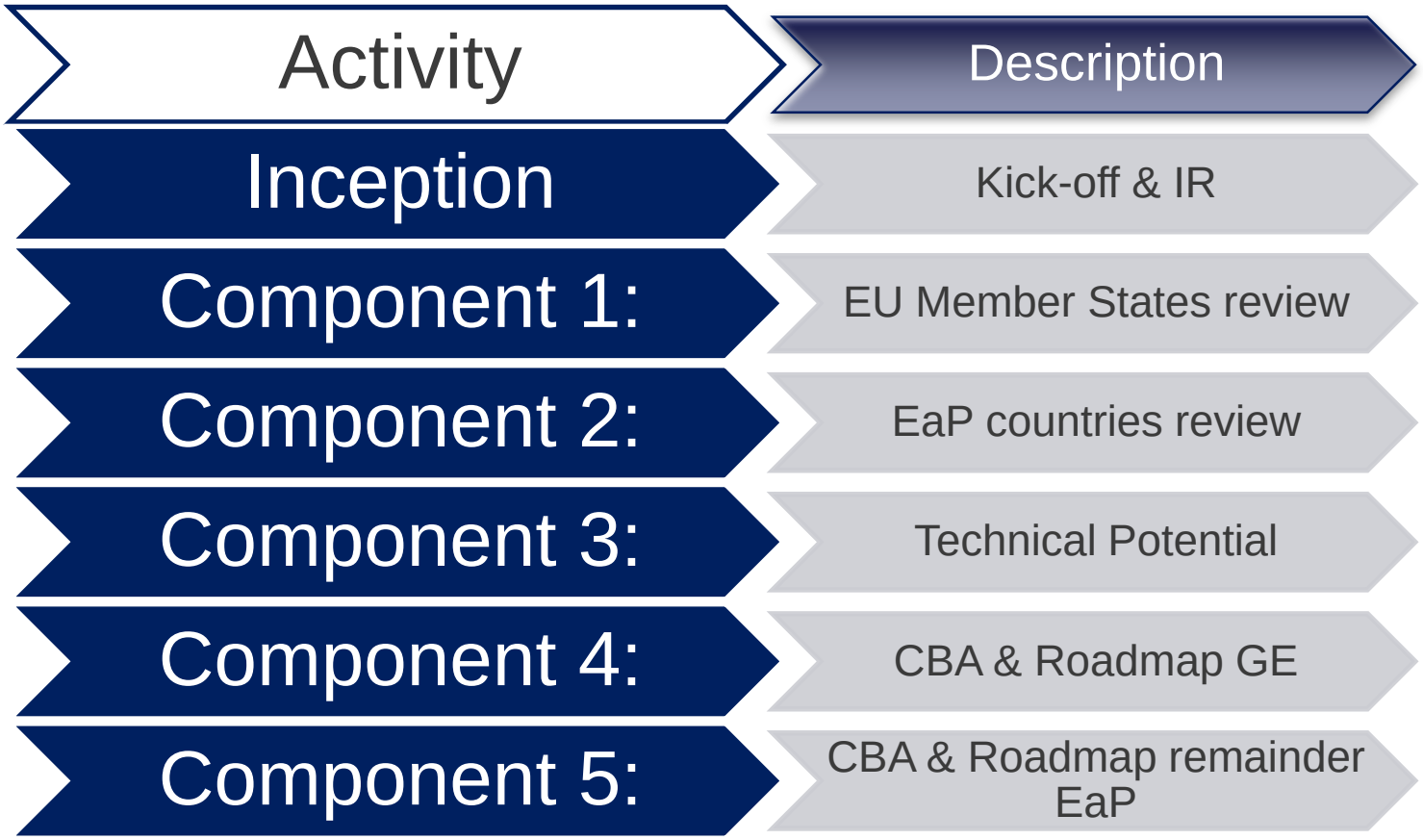
High Quality Studies for the Eastern Partnership

An EU-funded Project

Agenda

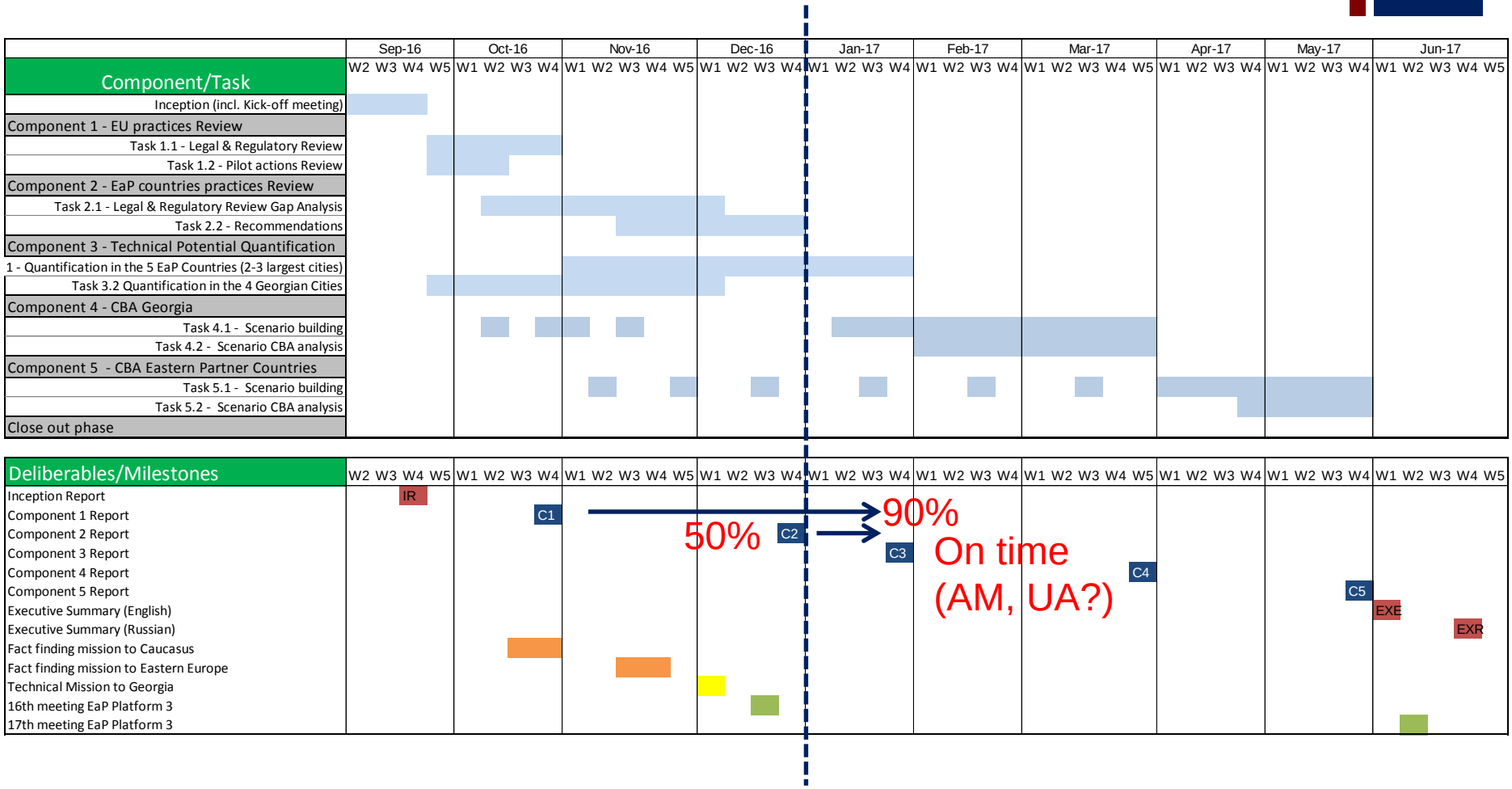
- A recollection of the scope of work
- An overview of the progress so far
- Component 1: EU review progress
- Component 2: Eastern Partners review progress
- Component 3: Assessment of technical potential
- Next steps

An overview of the scope of work



Quick overview of progress so far

Components in progress: 1, 2 and 3



Component 1: EU practice (90%)

Contents of the Component 1 report:

Situation in the EU

Extensive literature review:

General overview of the PV market in the EU

Description of the special technical and economic features of building attached PV systems

The decision making process for building attached PV investment

The EU practice – current legislative, regulatory, licensing & support framework

Instruments & Case studies

From the wider EU picture to specific MS – DE, GR, IT, NE, UK – selection based on:

- building PV deployment
- geographical spread
- availability of information

Further description of special programmes-policies for building attached PVs – lessons learned

Decentralisation – paradigms of local initiatives

Recommendations

Component 1: EU practice (90%)

Challenges:

- An ocean of information for general PV technology and market issues
- The EU: a test bed for policies and schemes
- A few pioneer Member States
- Many generic references - no detailed evaluation info for specific programmes
- Ultimately building PVs fit in the national RES support scheme - a changing environment (self-consumption, grid and electricity markets issues) !

Component 2: EaP counties status quo (50%)

Contents of the Component 2 report:

An overview of building PV (common & national specificities)

6 Specific Country Profiles

Conclusions and country recommendations

Component 2: EaP counties status quo (50%)

Contents of the Component 2 report:

- **Six specific country reports** focusing on:
  - Specific measures at country level to promote PV rooftop installations
  - Energy and electricity market legislation and regulation having a potential positive (driver) or negative (barrier) impact on PV rooftop market
  - Existing renewable support schemes and the role of PV rooftop within the identified schemes
  - Existing national policies and commitments to promote renewable sources of energy
  - Electricity market structure and characteristics with relevance to PV sector (unbundling, third party access, net metering, tariff structure, etc.)
  - Existing complementary measures, not necessarily linked with the electricity sector, promoting PV rooftop solutions (e.g. fiscal measure, building regulation)
  - Existing PV rooftop projects (cost, performance, etc.)
  - Financial instruments favoring PV rooftops

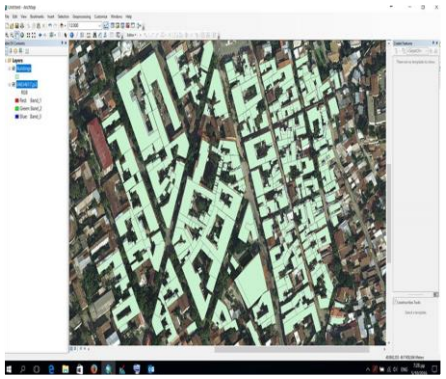
Component 2: EaP counties status quo (50%)

Challenges:

- Mobilising local expertise and engagement of local stakeholders required some progress to be made first on Component 1 (as guidance) – time consuming!
- Countries at different compliance schedule (EnCT signatories at an accelerated market transformation)
- Information gap: General info on RES but not specifically on building PVs (niche market)
- Several determinants of framework conditions (besides FiT) are missing i.e. (authorisations, relation to building codes, access to grid and finance!)

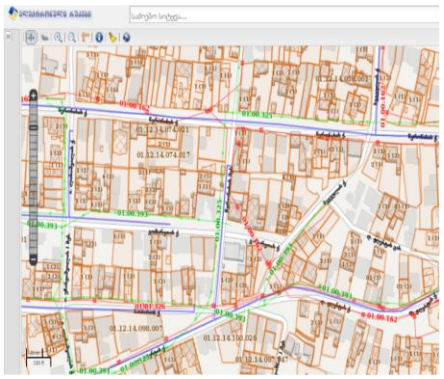
Component 3: Methodology in a nutshell - 1

Assessment of existing GIS data



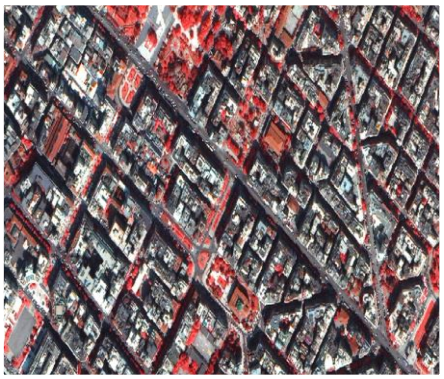
Existing GIS data

Option-1



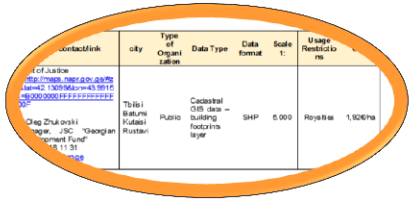
Existing Cadastral data

Option-2



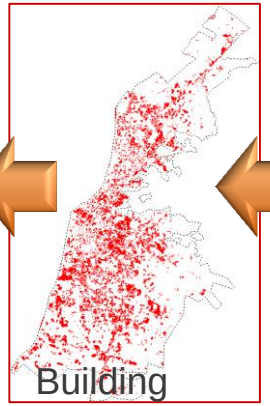
Aerial/Satellite imagery

Option-3



City	Total number of buildings	Total building roof area (m^2)	Average building roof area (m^2)
Tbilisi	245,639	24,634,075	100
Batumi	10,143	2,879,820	284
Kutaisi	28,835	4,816,095	167
Rustavi	16,233	2,904,118	179

GIS output



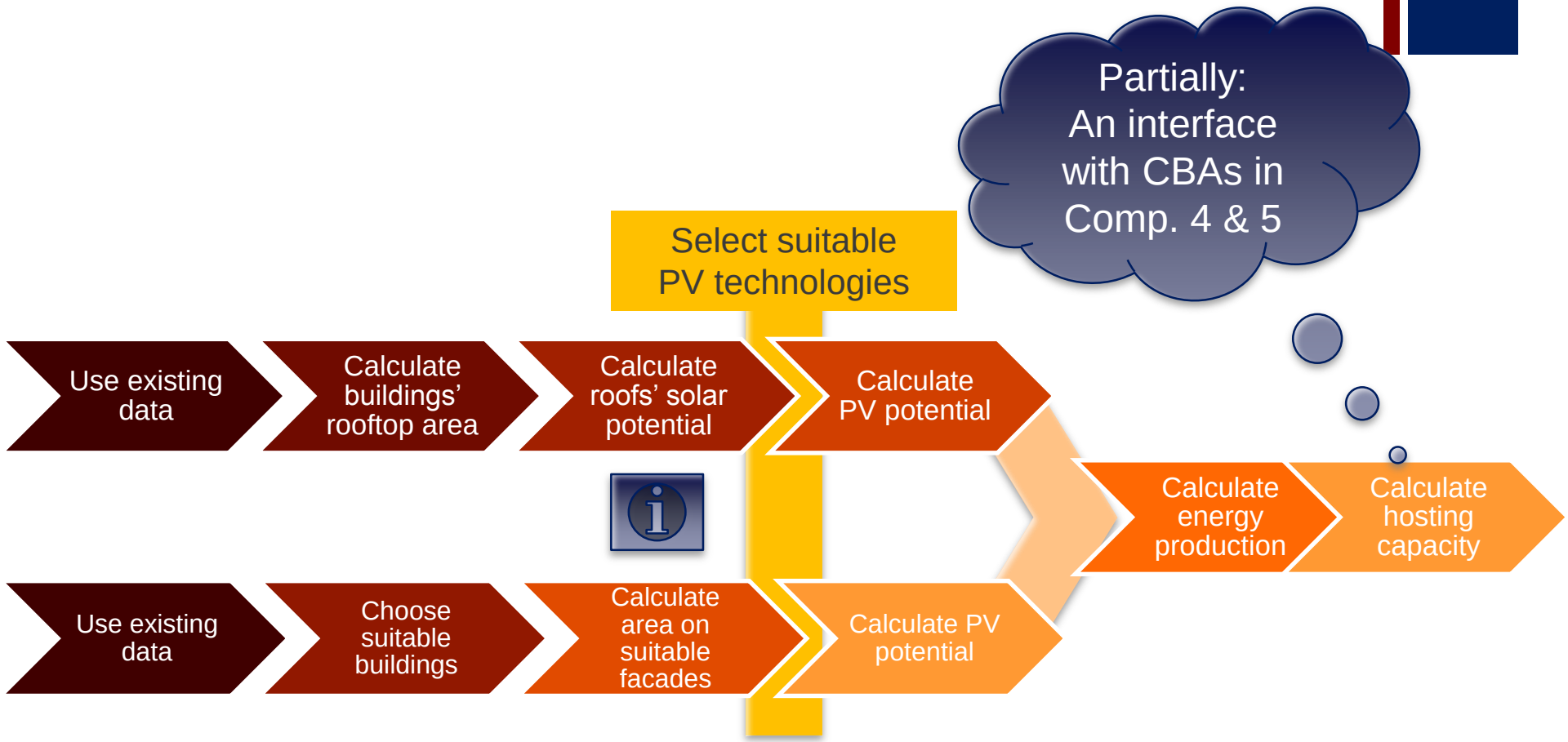
Building classification

Satellite image

Expected accuracy reduction of Option-3 vs. Option-1: ≤ 10%

Component 3: Methodology in a nutshell - 2

Estimation of PV potential



Component 3: Technical Potential

Challenges:

- **Surface recognition:**

  GIS data are preferable for better accuracy

  - GEORGIA, MOLDOVA : GIS data received – used (Option 1-2)
  - ARMENIA: Official request filled; GIS data pending
  - AZERBAIJAN, BELARUS: Not availability of data (Option-3 pursuit)
  - UKRAINE: Official request pending

- **Surface utilisation:**

  Lack of building stock data

  - Types of roofing and conflicting uses of the roofs – Remedy: Satellite data & local information on prevailing practices
  - No practical possibility to calculate the potential of facades. Therefore, a small number of suitable buildings will be chosen and used to evaluate the potential

Component 2 & 3: Summary of progress

Country Profile: Prepared
Target Cities: not selected (Satellite)

Country Profile: not prepared
Target Cities: not selected

Draft Country Profile: Underway
Target Cities: Tbilisi, Batumi, Kutaishi, Rustavi (GIS)

Country Profile: Prepared
Target Cities: not selected (Satellite)

Draft Country Profile: Prepared
Target Cities: Chisinau, Balti, Cahul (GIS)

Country Profile: not prepared
Target Cities: not selected (GIS request pending)

Next Steps (mid Jan - Feb 2017):

EU practices

- Finalisation (team internal review)
- Outreach 1: EaP stakeholders review (what appears relevant interesting ?)
- Outreach 2 (optional): External comments (e.g. Solar Power Europe, IRENA, etc)

EaP Countries Status

- Complete Country Profiles
- Prepare recommendations as inputs to Cost Benefit Analyses (Component 4 & 5)

Next Steps (mid Jan - Feb 2017):

Potential Assessment

- Complete surface data collection (AZ, BY, AM, UA)
- Finalise technical potential calculations (as soon as the above surface related data are complete)

CBAs

- Kick-start with a methodology development
- Additional data collection (in excess of Country profiles if required)

Thank you

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Annex: Methodology

Estimation of PV potential

- **Typologies of roof types and suitability for PVs**

Based on literature and the expertise of the team, the PV potential of the various roof types has been assessed