

**United Nations Economic Commission for Europe  
Team of Specialists on Public-Private Partnerships  
(TOS PPP)**

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Schedules and Annexes

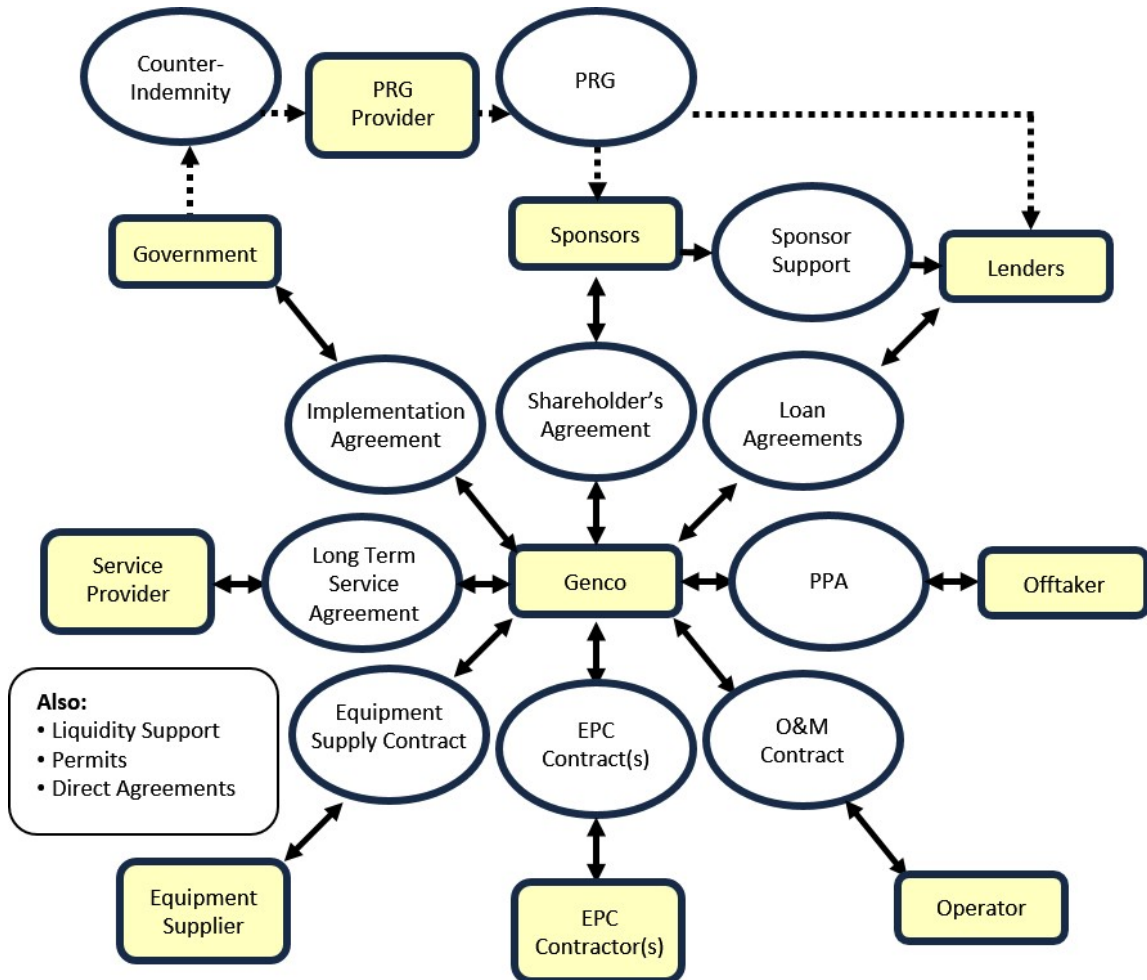
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**Schedule 1**  
RE PPP/IPP Structure Diagram



## Schedule 2 Risk Allocation Matrix

| Risk Category | Risk Allocation between Genco <sup>1</sup> and the Offtaker under the PPA   | Host Government Support  |
|---------------|---|--|
| 1.            | <p><b>Availability and suitability of source energy</b></p> <p>Under an ‘all energy’ tariff model (as typically used on renewable independent power projects in EMDE countries), the RE PPP is only paid for electrical energy, which it delivers (or is deemed to have made available).</p> <p>The supply of source energy adequacy and suitability risk can be quantified with a certain degree of precision: for wind, two years of on-site measurements using a certified mast are usually sufficient; for PV solar, even less data is deemed sufficient for a Genco to assume the risk of source energy. This risk is mitigated only to the extent that, where appropriate, the host Government commits not to carry out or to permit other developments which may impair or reduce the supply of source energy; e.g., in relation to hydro projects, upstream irrigation or water diversion projects.</p> | <p>For hydropower, however, 35 years of river-flow or rain measurements in the proximity of the plant-site are usually required to properly assess hydrology risk: in many EMDE countries this data is not available, therefore for large hydropower plants it is not unusual for host Governments to assume resource availability risk through a variety of risk sharing mechanisms.</p> <p>In addition, for large hydro plants, the host Government often is contractually required to ensure that no development occurs upstream of the Plant which would have a material adverse effect on total water inflows to the Plant, or – alternatively - to compensate the plant owner. Similarly, for solar PV projects in developed areas, a host Government obligation not to permit developments, which may shade the Site or otherwise impair Site irradiation via pollution/dust, may be appropriate.</p> |
| 2.            | <p><b>Site acquisition</b></p> <p>The respective responsibilities in relation to Site acquisition will depend on the underlying circumstances of each individual Project.</p> <p>In practice, it is expected that in most cases Genco will be responsible for acquiring ownership or a long lease of</p>  | <p>The host Government will be expected to:</p> <ul style="list-style-type: none"> <li>• grant all necessary land rights where it owns the Site; and</li> <li>• assist in Site expropriation to the extent that (a) expropriation is required, and (b) Government</li> </ul>   |

<sup>1</sup> GENCO in this Schedule 2 is a term commonly used in PPAs for the power generating and selling entity of a power purchase transaction. In context of this Standard, this term is interchangeable with the RE PPP project SPV.

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|---------------|--|---|
|               | <p>the Site.</p> <p>In some cases, it may be that the Offtaker and/or the host Government or another parastatal entity will be responsible for supplying the Site, in which case the relevant entity will need to transfer either ownership or a long lease of the Site to Genco.</p>  | <p>involvement in the expropriation process is required under domestic law and/or otherwise desirable.</p> <p>Note also the discussion of Permitting Risk at point 0 (<i>Permitting Risk</i>) below.</p>  |
| 3.            | <p><b>Construction Risk</b></p> <p>It is often said that investing in the development of a RE plant is like pre-paying for energy. Relative to conventional “thermal” energy generation, such as a diesel, coal and gas-fired steam turbine engines, RE technologies such as wind, solar and hydro have the common characteristic of higher initial plant realization costs, and much, much lower operation and maintenance costs. For this reason, the risk of cost overruns in the initial construction phase is the single most important risk in the development of RE generation. Hence, one key benefit for host Governments, of RE PPPs is the transfer of construction risk to the private party.</p> <p>Typically, for wind, solar and small hydropower plants, Genco will be solely responsible for all risks associated with plant design, financing, construction, and attaining COD ‘on time’.</p> <p>The <b>“Scheduled Commercial Operation Date”</b> will be defined as a period of time from the PPA Effective Date (typically two years away, for wind, solar and small hydropower plants, up to six years for large ones).</p> | <p>Large hydropower plants require complex tunnelling and foundation works, the ultimate cost of which is extremely hard to anticipate with precision due to the uncertain nature of the geological conditions. Expensive drillings and geotechnical tests only go so far in informing about the nature of soils: unexpected conditions are the norm. For these reasons, it is extremely uncommon for any EPC contractor, and therefore for any private investor, to accept the “soil and ground condition” component of project construction risk.</p> <p>Thus, for large hydropower plants it is not unusual for host Governments to share certain well defined components of construction risk: this can be done by triggering a tariff revision (or other forms of compensation) once the contingencies in the EPC contract are exhausted (note that – in this case - the Government will need to have a more active role in the negotiation and supervision of the construction contract).</p> |

| Risk Category | Risk Allocation between Genco <sup>1</sup> and the Offtaker under the PPA  | Host Government Support  |
|---------------|--|--|
|               | <p>The <b>“Required Commercial Operation Date”</b> will be defined as a period of time from the Scheduled Commercial Operation Date.</p> <p>The Scheduled Commercial Operation Date (and therefore the Required Commercial Operation Date) will extend for a period, typically up to 180 days, for force majeure and/or Government and/or Offtaker ‘fault’ (<b>“Excused Events”</b>).</p> <p>If the effect of Excused Events continues beyond the maximum extension period, this will give Genco a termination right.</p> <p>Failure to achieve COD by the Scheduled Commercial Operation Date (as extended if Excused Events arise) will give rise to an LD payment obligation.</p> <p>Failure to achieve COD by the Required Commercial Operation Date (as extended if Excused Events arise) will give the Offtaker a termination right.</p> |  |
| 4.            | <p><b>Permitting Risk</b></p> <p>Genco must duly and properly apply for all necessary permits, but will be given relief to the extent that the issue of such permits is delayed or not forthcoming due to the failure / default of a Government Agency or the Offtaker.</p>  | <p>Government to provide all reasonable support and cooperation to assist Genco in obtaining all necessary permits and authorisations.</p> <p>Provided that Genco and/or the Offtaker (as appropriate) have:</p> <ul style="list-style-type: none"> <li>• duly and properly applied for the issue (or, as appropriate, the renewal) of a requisite permit;</li> <li>• paid any associated fee applied in a non-discriminatory manner;</li> <li>• diligently pursued the issue (or, as appropriate, the renewal) of such</li> </ul> |

| Risk Category |                         | Risk Allocation between Genco <sup>1</sup> and the Offtaker under the PPA   | Host Government Support  |
|---------------|-------------------------|---|--|
|               |                         |   | <p>permit; and</p> <ul style="list-style-type: none"> <li>kept the host Government informed of any delay in the issue (or, as appropriate, the renewal) of such permit;</li> </ul> <p>then:</p> <p>(a) any failure or delay in issuing or renewing the relevant permit; and/or</p> <p>(b) the application of material conditions to the issue or renewal of such permit, which adversely affect the Offtaker's and/or the Generation Company's ability to carry out the Project [and which did not exist at the Effective Date];</p> <p>will be a Government risk.</p> |
| 5.            | <b>Decommissioning</b>  | Depending on the generation technology, Genco may have a decommissioning obligation.  | For example civil works of hydropower plants medium and large have a technical life of over 100 years (up to 50 years for electromechanical equipment), and therefore almost never carry a decommissioning obligation. Rather, the host Government in most cases expects to receive the asset back in good working condition, unencumbered by major deferred maintenance liabilities.  |
| 6.            | <b>Performance Risk</b> | <p>Genco will be subject to performance ratio and/or availability targets (in practice depending on the generation technology), and associated liquidated damages.</p> <p>Prolonged failure to attain such targets will ultimately lead to a Genco Event of</p> |  |

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|---------------|--|--|
|               | Default and subsequently a right of the Offtaker to terminate the PPA for Genco 'fault'.   |  |
| 7.            | <p><b>Despatch Risk; Grid Outages and/or Constraints</b></p> <p>Where Genco is unable to deliver power due to:</p> <p>(a) a grid failure;</p> <p>(b) a grid constraint;</p> <p>(c) a delay in attaining COD caused by the fault of the Offtaker, the host Government, the TSO and/or the Offtaker(s); and/or</p> <p>(d) a failure to despatch the entire available capacity of the Plant from time to time and/or back down instructions;</p> <p>then (potentially subject to a threshold number of 'excused grid unavailability' hours each year), the Offtaker shall make Deemed Energy Payments to Genco.</p> |  |
| 8.            | <p><b>Transformer and Transmission Losses</b></p> <p>Genco is paid for delivered and/or deemed energy measured at Genco's Delivery Point.</p>  |  |
| 9.            | <p><b>Shallow Grid Connection</b></p> <p>Genco will:</p> <p>(a) construct the shallow grid connection (including transmission lines and substation if necessary), to connect the Plant to the agreed connection point on the existing grid; and</p> <p>(b) transfer the shallow grid connection to the domestic TSO on (or before) COD, after which time the shallow grid connection shall (i) form part of</p>  | <p>The host Government to procure that the transmission system operator undertakes the necessary grid construction / improvement works by the deadline date.</p> |

| Risk Category | Risk Allocation between Genco <sup>1</sup> and the Offtaker under the PPA          | Host Government Support   |
|---------------|--|---|
|               | the domestic electricity grid, and (ii) be the responsibility of the domestic TSO. |   |
| 10.           | <b>Exchange Rate Risk</b>  | The tariff will be denominated in the same currency as Genco's primary source of funding (usually foreign currency) but may be paid in local currency at the prevailing buy rate for each payment period.   |
| 11.           | <b>Liquidity Support</b>   | No liquidity support provided by the Offtaker to Genco as the Offtaker is itself typically not sufficiently creditworthy. Since in many EMDE countries the oftaker is not a creditworthy entity, liquidity support is usually provided to the Genco in the forms described in 11.3.4 and, if required, counter guaranteed by a creditworthy institution (e.g. a World Bank's Credit Guarantee, as in the case of the Scaling Solar program.).   |
| 12.           | <b>Convertibility and repatriation of funds<sup>2</sup></b>                        | See comments in the next column. No restrictions on conversion of local currency into foreign currency and <i>vice-versa</i> , in each case at a market rate of exchange. Where appropriate, potentially designate the power sector as a priority sector for priority allocation of foreign exchange reserves. No restrictions on the repatriation/transfer of currency to recipients located outside of the host country. No restrictions on / consent to open, maintain and operate local and foreign currency accounts within the host |

<sup>2</sup> Harry and Cathy please check



| Risk Category | Risk Allocation between Genco <sup>1</sup> and the Offtaker under the PPA  | Host Government Support   |
|---------------|--|---|
|               |  | <p>Country.</p> <p>No restrictions on / consent to (a) open bank accounts outside of the host Country, and (b) receive and hold foreign currency in such foreign bank accounts.</p>   |
| 13.           | <p><b>Availability of finance</b></p> <p>Genco bears the full risk on its ability to source adequate debt and equity funding.</p>  |   |
| 14.           | <p><b>Change in Law / Tax - economic stabilisation and Government . Event of Default</b></p> <p>With limited exceptions, e.g. changes in domestic law, which merely bring domestic law up to existing international standards, Genco and its Lenders will not take Change in Law/Tax risk.</p>   | <p>Except in cases where the Offtaker is a domestic TSO and the Regulator approves an adequate compensatory increase in the wholesale tariff (or lump sum) payable to the Offtaker (and potentially an associated increase in the end user tariff), the relevant host Government will bear the risk/responsibility to compensate Genco (either directly, or via the Offtaker) for increased costs / reduced revenues caused by a Change in Law/Tax.</p> |
| 15.           | <p><b>Force Majeure affecting Genco</b></p> <p><b>Genco Relief From Obligations</b></p> <p>Genco will be relieved from its obligations under the PPA to the extent it is not able to perform those obligations as a result of a Force Majeure Event (“FME”).</p> <p>Note:</p> <p>1.The extension period may be capped at the number of days, which would give rise to a termination right for prolonged force majeure; and</p> <p>2.Except as expressly set out below (in relation to Local Political FMEs), while</p> | <p>The Government responsible for Local Political Force Majeure Events and must make Deemed Energy Payments in respect of the whole contracted capacity of the Plant.</p> <p>If the Local TSO is the offtaker, consider if the Local TSO should be jointly liable with the host Government to make Deemed Energy Payments in respect of Local Political Force Majeure Events.</p>   |

| Risk Category | Risk Allocation between Genco <sup>1</sup> and the Offtaker under the PPA   | Host Government Support |
|---------------|---|-------------------------|
|               | <p>Genco is excused from its obligation, it also does not receive any revenue when it does not deliver electrical energy as a result of an FME.</p> <p><b>Compensation: Local Political FME</b></p> <p>In the case of local political FMEs only, either (a) the Offtaker will owe Genco compensation and seek to recover this from the host Government, and/or (b) the host Government will owe Genco compensation.</p> <p><b>Prior to termination:</b> Post COD and prior to termination of the PPA, the compensation amount will be calculated in the same way as deemed energy payments.</p> <p><b>Post termination:</b> If the PPA terminates for prolonged Local Political FME, the buy-out price under the resulting put option will be the same as for Government default.</p> <p><b>Compensation: Foreign Political FME and Non-Political FME</b></p> <p><b>Prior to termination:</b> no compensation is payable, if the risk is insurable.</p> <p><b>Post termination:</b> If the PPA terminates for prolonged Foreign Political FME or Non-Political FME, the buy-out price under the resulting call option will be the 'no fault' purchase price.</p> <p><b>Termination for Prolonged FME</b></p> <p>Genco has the right to terminate for prolonged FME.</p> |                         |
| 16.           | <p><b>Force Majeure affecting</b></p> <p>All FME's affecting TSOs: the</p>  |                         |

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|---------------|--|---|
| Offtakers     | <p>Offtaker's obligations to pay for electrical energy delivered by Genco and/or for deemed energy are <u>not</u> excused for FMEs affecting the TSOs (and should flow through to the relevant TSO either under the PPA with the TSO and/or the Wheeling Agreement with the TSO (if there is one)).</p> <p><b>Local Political FMEs affecting Non-TSO Offtakers:</b> The obligation to pay Genco for delivered and/or deemed energy is not excused but should ultimately sit with the host Government either through the Direct Approach or the Flow Through Approach.</p> <p><b>Foreign Political FMEs affecting Non-TSO Offtakers</b></p> <p>The Offtakers (and therefore the Offtaker) will be excused from paying for deemed energy, save that:</p> <p>(a) the Offtaker will use reasonable efforts to continue to take energy from Genco and sell it to a third party customers, in which case the revenue received (less a small 'service charge' retained by the Offtaker) will be payable to Genco; and</p> <p>(b) to be discussed, if the relevant event occurs in a country other than Genco's host country, but which is also an the Offtaker member, whether the Government of the country in which the event occurred can bear liability under the Offtaker establishment agreement.</p> |   |
| 17.           | Force Majeure Affecting the  | The Offtaker is excused from its [Any guarantees from the host Government, especially if the FM lasts |

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|---------------|---|---|
|               | Offtaker obligations.   | more than the certain period of time].  |
| 18.           | <p><b>Genco Events of Default</b></p> <p>A customary list of Events of Default includes:</p> <ol style="list-style-type: none"> <li>1. failure to pay any amount due to the Offtaker within [15-30] days after receipt of notice that such payment is overdue;</li> <li>2. insolvency related events;</li> <li>3. persistent failure to achieve performance and/or availability targets (as appropriate for each technology);</li> <li>4. material breach;</li> <li>5. Genco Event of Default under another Project Agreement (save that the PPA cannot terminate unless and until the relevant other Project Agreement terminates);</li> <li>4. failure to maintain governmental consents unless caused by fault of the host Government.</li> <li>5. Failure to achieve Financial Close within [90] days of Required Financial Close Date;</li> <li>6. Failure to achieve COD within [180] days of Required COD;</li> <li>10. Abandonment of the Project.</li> </ol> |   |
| 19.           | <p><b>Offtaker Event of Default</b></p> <p>Customary list of Events of Default including:</p> <ol style="list-style-type: none"> <li>1. Failure to pay any amount due to Genco within [15-30] days after receipt of notice that such payment is overdue;</li> <li>2. Insolvency Events;</li> </ol>  | Event of Default under the PSA and relevant portion of the PPA will cross-default the Government Support Arrangements and <i>vice versa</i> . |

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|---------------|--|--|
|               | <ul style="list-style-type: none"> <li>3. Material breach;</li> <li>4. Failure to complete any necessary grid improvement works by the longstop date;</li> <li>5. Assignment of the PPA in breach of restrictions;</li> <li>6. Change in Law that:               <ul style="list-style-type: none"> <li>a. renders a material undertaking of the Offtaker void or unenforceable;</li> <li>b. renders a material right of Genco void or unenforceable;</li> <li>c. restricts repatriation of dividends or the payment of loans; for the period of [90 – 180] days;</li> </ul> </li> <li>7. Offtaker Event of Default or Government Event of Default under another Project Agreement.</li> </ul> |  |
| 20.           | <p><b>Termination Events</b></p> <p>Genco may terminate for the Offtaker Event of Default (subject to cure periods).</p> <p>The Offtaker may terminate for Seller Event of Default (subject to cure periods and funder rights under Direct Agreement).</p> <p>Genco may terminate for prolonged (180 days) Political or Non-Political FMEs.</p>  | <p>Termination of the PSA and relevant portion of the PPA will cross-default the Government Support Arrangements and <i>vice versa</i>.</p>  |
| 21.           | <p><b>Compensation on Termination</b></p> <p>The amount of compensation payable to the Seller will depend on the reason for termination.</p>   | <p>In order to ensure the bankability of the project, the PPA or IA's termination clauses provide for varying termination payments due from the Offtaker / the Government under different default situations.</p> <p><b>Offtaker Event of Default</b></p> <ul style="list-style-type: none"> <li>1.Outstanding debt obligations, plus</li> <li>2.Outstanding equity (consider straight line depreciation), plus</li> <li>3.Return on outstanding Equity (to</li> </ul> |

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|---------------|---|---|
|               |   | <p>cover a sufficient period to allow investors to re-allocate funds; typically, between 18 months' to 3 years' expected return on the Project discounted to NPV), plus</p> <p>4. Termination and transfer costs,</p> <p>Less</p> <p>5. Compensation for environmental and deferred maintenance liabilities.</p> <p><b>Local Political Force Majeure</b></p> <p>Same as Offtaker Event of Default less any insurance proceeds.</p> <p><b>Non-Political Force Majeure and Foreign Political Force Majeure.</b></p> <p>1. Outstanding debt obligations, plus</p> <p>2. Termination and transfer costs.</p> <p>Less</p> <p>3. Insurance proceeds.</p> <p><b>Genco Event of Default</b></p> <p>1. Outstanding debt obligations, plus</p> <p>2. Termination and transfer costs,</p> <p>Less</p> <p>4. Compensation for environmental and deferred maintenance liabilities.</p> |
| 22.           | <b>Assignment and Change of Control</b>                                   | <p>Genco is permitted to assign the PPA to its lenders by way of security and the lenders are permitted to assign or novate the PPA in accordance with the terms of the Direct Agreement (see below). Any</p>   |

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|---------------|--|---|
|               | <p>other assignment by Genco will require the Offtaker's consent.</p> <p>The Offtaker is permitted to transfer the PPA to a successor to the business of the Offtaker.</p> <p>Restrictions will be placed on equity transfers by the original shareholders of Genco until the [second] anniversary of COD in order that they remain fully incentivised to deliver the Project to the standards required and the Plant has proven its operational capability.</p> |   |
| 23.           | <p><b>Dispute Resolution</b></p> <p>Any disputes that cannot be resolved by management-level negotiations will be subject to final, binding resolution by arbitration, in a neutral location, under rules generally acceptable to the international community (e.g. LCIA (London) or neutral regional centres such as LCIA-MIAC (Mauritius)).</p>  | No sovereign immunity.  |
| 24.           | <p><b>Direct Agreement</b></p> <p>The Offtaker to enter into a direct agreement with Genco and the project lenders on customary terms, providing the project lenders rights to notice, reasonable additional cure periods, step-in rights, and rights to novation and substitution.</p>  | There will also be usually a similar direct agreement entered into by Genco, the Government and the project lenders in respect of IA. |
| 25.           | <p><b>Security Agreements</b></p> <p>Genco will grant security over all of its rights and assets in favour of the lenders.</p> <p>The Offtaker will require a second-ranking charge over such assets, with its rights subordinated to those of the lenders.</p>  |   |

## **Schedule 3**

### **Form of Due Diligence Questionnaire**

#### **Renewable Infrastructure Laws: General Questions**

##### **1. General Legislative and Institutional Framework**

- ⊗ Does the constitutional, legislative and institutional framework for the implementation of privately- financed renewable infrastructure projects ensure transparency, fairness, and the long-term sustainability of projects?
- ⊗ Are there undesirable restrictions within that framework on private-sector participation in renewable infrastructure development and operation?
- ⊗ If so, how can they best be eliminated?

##### **2. Scope of Authority to award projects**

- ⊗ Does the law clearly identify the public authorities of the host country (including, as appropriate, national, provincial and local authorities) that are empowered to award privately-financed renewable infrastructure projects (“PPPs”) and contracts for their implementation.
- ⊗ Is there a clear allocation of such powers as between national and local authorities?
- ⊗ Is it clear that these powers extend both to the construction and operation of new facilities and the maintenance, modernization, expansion and operation of existing facilities?
- ⊗ Does the law identify with sufficient clarity the sectors or types of renewable infrastructure in respect of which PPPs may be granted?
- ⊗ Does the law address questions of geographical extent and exclusivity relating to the jurisdiction of the relevant authorities with sufficient clarity, and the resolution of overlapping jurisdictions?

##### **3. Administrative Co-ordination**

Have adequate institutional mechanisms been established to co-ordinate the activities of the public authorities responsible for issuing approvals, permits, licences and consents needed for the implementation of the renewable project?

##### **4. Regulatory Authority**

- ⊗ Is there a clear separation of authority between the regulator and the entity providing the services?
- ⊗ Has regulatory competence been entrusted to functionally independent bodies sufficiently autonomous to ensure their decisions are taken without political interference or inappropriate pressures from operators and service providers?
- ⊗ Are the rules governing regulatory procedures publicly available?



- ⊗ Is there an obligation to provide reasons for regulatory decisions, with sufficient access for interested parties?
- ⊗ Are there transparent procedures whereby regulatory decisions can be appealed to – and reviewed by – an independent and impartial body, and clear criteria applicable thereto?

## **5. Risk Allocation**

- ⊗ Are there any unnecessary statutory or regulatory limitations on the ability of the contracting authority and the developer/investor to agree on an allocation of risks in the project agreement that is best suited to the project?

## **6. Government Support**

- ⊗ What feed in tariffs (or other support) are available for the project?
- ⊗ Is there any direct promotion through governmental support programmes (auctions etc) for the project?
- ⊗ Are there any other subsidies, quotas applicable or soft loans available by the government for the project?
- ⊗ Are there any fiscal incentives and/or grants and rebates for the project?
- ⊗ Were any renewable energy targets adopted by the government?
- ⊗ Does the law make it clear which public authorities may provide financial or economic support to the implementation of the project (where needed) and what types of support are they authorised to provide? Does the government guarantee the payment of tariffs by the utility?

## **7. Selection of the IPP developer**

- ⊗ General: Are the law's selection procedures sufficiently transparent and efficient, and well-adapted to the particular needs of privately-financed renewable infrastructure projects?
- ⊗ Are there clear and well-structured procedures relating to:
  - pre-selection
  - single and two-stage procedures (as appropriate) for requesting proposals from pre-selected bidders?
  - the content of final proposals?
  - requests for clarification and modification?
  - appropriate evaluation criteria?
  - accepting and evaluating proposals?
  - final negotiation and project award?

- award of the project without using competitive procedures (and the circumstances in which this can be done)?
- the treatment of unsolicited proposals?
- confidentiality of submissions and negotiation?
- publication of final award?
- maintenance of records of selection and award proceedings and scope of public access thereto?
- the right to appeal against or seek review of the contracting authority's acts?

## 8. Project Agreement

- ⊙ Does the law allow sufficient scope and flexibility for the parties to agree on the contents of the project agreement as best suited to the needs of the project?
- ⊙ Does it contain any unnecessary constraints in this context?

## 9. Project site, assets and easements

- ⊙ Is the law sufficiently flexible in terms of the controls it permits to be vested in the developer over the use and ownership of the site and the assets comprised in the project? (For example, can clear distinctions be made (if necessary) between public assets and private property? Can the developer be obliged to transfer some assets and retain others at the end of the project?)
- ⊙ Does the law make it possible for the developer to obtain/enjoy ancillary property rights (easements etc.) related to the project as necessary for the performance of its obligations – e.g. to enter upon/transit through property of third parties?
- ⊙ Does the developer have to access the site, public records, and permitting agencies, to obtain the following:
  - (a) land title surveys / records/assurances
  - (b) land entitlements (options or title/lease)
  - (c) engineering surveys of site
  - (d) meteorological (including wind and solar resource) data collection
  - (e) environmental surveys
  - (f) environmental studies and permits
  - (g) zoning amendments

## 10. Tariffs

- ⊙ Does the law enable/allow the contracting authority (or other government body) to pay the developer for its services where appropriate?

- ⊙ Where needed, does the law contain adequate regulatory controls over the developer's charges and tariffs?

## **11. Finance and Security**

- ⊙ Does the law allow the developer to raise and structure the finance it needs for the project (with sufficient flexibility in terms of sources, mixture, use and application etc.)?
- ⊙ Does the law enable the developer to grant adequate security over the project assets for the purposes of raising such finance, including: (a) mortgage/charge over its property (immoveable and moveable); (b) pledges of shares in the project company; (c) a charge over proceeds and receivables; (d) an assignment of contractual rights and claims; (e) any other suitable security?
- ⊙ Are there restrictions in the law relating to the grant of security over any public assets comprised in the project? Are these prejudicial to the developer's ability to finance the project?
- ⊙ Does the law allow for the creation of appropriate "step-in rights" in favour of lenders where required?
- ⊙ Does the law make it possible for a controlling interest in the project company to be transferred to a third party where appropriate?

## **12. Construction Works**

- ⊙ Does the law contain any unnecessary restrictions relating to the parties' ability to agree on suitable provisions for the design and construction of the project works (including (a) the drawing up, review and approval of construction plans and specifications; (b) the preparation of the design; (c) the contracting authority's right to monitor construction; (d) the contracting authority's power to order variations where appropriate; (e) procedures for testing, inspection, approval and acceptance of the facility; (f) latent defects and liability)?

## **13. Operation of the Facility**

- ⊙ Does the law contain any (unnecessary) restrictions relating to operation of the completed facility and the parties' ability to agree on suitable provisions relating thereto (including, for example:

- continuity of service provision;
- non-discriminatory access and availability;
- provision of information and progress reports;
- the contracting authority's right to monitor performance;
- the contracting authority's right to exercise appropriate emergency step-in and operation powers;
- the making (and publication) of rules governing use and operation?

#### 14. Ancillary Contractual Arrangements

- ⊙ Does the law contain any (unnecessary) restrictions on the developer's freedom to agree the terms of the various project and other contracts with third parties necessary to give effect to the project (e.g. construction/O&M/shareholders agreements)? For example, are there (unnecessary) requirements to obtain government approvals, apply local law, restrictions on "delegation" etc.?
- ⊙ Does the law contain other (unnecessary) restrictions relating to the parties' freedom to agree on other fundamental provisions of the project agreement such as:
  - suitable performance guarantees;
  - suitable insurance arrangements;
  - modifications for events of force majeure/changes in law/stabilisation provisions, and the payment of compensation where appropriate?
  - extensions of time for completion/extension of the term of the PPA?
  - remedies for default
  - local content requirements..

#### 15. Duration, extension and termination of Project Agreement

- ⊙ Does the law prescribe a (maximum) duration for the project and the PPA?
- ⊙ Does it allow the conceding authority sufficient flexibility to agree an appropriate term?
- ⊙ Does it permit the term to be extended in appropriate circumstances (e.g. completion delay due to force majeure/government suspension of the project/compensation for change in law)?

#### 16. Termination of PPA

- ⊙ Does the law contain any (unnecessary) restrictions on the parties' freedom to agree on termination rights and procedures that are best suited to the project. The law will often provide for termination rights, of course. But are these:
  - sufficiently flexible to be developed/modified in the agreement as appropriate?

- sufficiently clear and balanced (and fair to the developer)?
  - subject to a “public interest” termination right? If so, will these be acceptable to the developer and its lenders (this will often come down to the payment of adequate compensation)?
  - sufficiently broad to allow for force majeure/suspension/frustration terminations?
- ⊗ Does the law allow adequate “step-in rights” to be granted to lenders (see above)?
- ⊗ Does the law deal adequately with the subject of compensation payments on termination? In particular:
  - will the parties have sufficient flexibility to provide for this in detail in the project agreement?
  - is it possible to deal appropriately with the full range of termination events and categories of loss (including the fair value of works performed/lost return to shareholders/payment out of debt)?
- ⊗ are any restrictions consistent with “international norms” and the expectations of lenders?
- ⊗ Does the law contain any (unnecessary) restrictions relating to:
  - the transfer of technology required for operation of the facility?
  - the training of the contracting authority’s personnel?
  - the provision of O&M services and spare, if required, for a limited period after termination?

## 17. Settlement of Disputes

- ⊗ Does the law allow the parties to the project agreement sufficient freedom/flexibility to agree on dispute-resolution mechanisms which are best suited to the needs of the project (including choice of law/international arbitration/mediation and “panel” mechanisms etc.)?
- ⊗ Are foreign arbitral awards enforceable without re-hearing or re-adjudication?
- ⊗ If not, how prejudicial could any restrictions be?
- ⊗ Does the law contain any unnecessary restrictions on the developer’s freedom to agree on the most appropriate dispute-resolution mechanisms with its third party contractors (including shareholders/lenders/contractors/operators and suppliers)?
- ⊗ Are “special dispute resolution” mechanisms needed/allowed for in relation to disputes with customers/members of the public in connection with use of the facility?

## 18. Grid-Related Issues

- ⊗ Are there protections against congestion, curtailment and grid failure?

- ⊗ Is the regulation and management of the grid well-established?
- ⊗ Is priority of interconnection and curtailment well-established?

## **19. Variable Renewable Energy Considerations**

Due to the variable nature of wind and solar energy it is important for the wider energy policy and framework to incorporate a careful analysis and management of additional factors such as back-up generation, system modification and grid accessibility for variable energy.

Below are some of the topics that are important to consider.

- ⊗ Is there a stable grid that a renewable energy project could connect to? Are grid data readily available to developers from utilities?
- ⊗ Are there incentives in place to encourage utility information's sharing with IPPs?
- ⊗ Does the grid have the capacity to absorb power from new generation? Is there a development plan in place to build or strengthen the grid especially if the grid is constrained?
- ⊗ Are renewable energy resource assessments available to project developers or must they perform their own?
- ⊗ Are grid operators able to integrate and manage renewable energy power plants? Is there a risk that a renewable energy generator will be disconnected as a result of a lack of operator experience with distributed generation or as a result of power failure?
- ⊗ Are there experienced local plant managers or service providers that can operate, maintain, and monitor installations to ensure they operate optimally and generate expected revenues?
- ⊗ Is renewable energy technology and/or component manufacturing present in the country?
- ⊗ Does the introduction of renewables in the power system enhance the overall PPP investment in transmission and distribution?
- ⊗ Renewable based energy requires technical and regulatory certainty about the availability of renewable ready transmission resources – methods to achieve that?
- ⊗ Should renewable energy generation investment go hand in hand with power transmission and regional interconnection investment?

## Schedule 4 Case Studies

### 1. Hydropower PPP case study: Ashta, in Albania<sup>3</sup>

The Ashta hydropower plant was Albania's first major hydro-power plant development in 30 years and the Government's first large public-private partnership (PPP) in the energy sector.

In February 2001, Albania's state owned power utility, hired a contractor to build a hydropower plant on the lowest reach of the Drin River on a turnkey basis. The project featured a diversion weir, a headrace canal, an aboveground powerhouse, and a tailrace channel conveying the discharge of 540 m<sup>3</sup>/s to the Buna River, 4.5 km downstream of its confluence with the Drin. This design would have affected the levels of Lake Shkodra (an important wildlife refuge shared by Albania and Montenegro), and raised environmental and socioeconomic concerns, as well as riparian-rights issues for the two neighboring countries.

In August, the government suspended the contract and performed an independent assessment of project's environmental, financial, and economic feasibility, resulting in the recommendation to reduce the tailrace channel length and discharge the outflow into the Drin River upstream of the Buna confluence, decreasing the available head and plant capacity from 73MW to 48MW, but eliminating most of the project's adverse environmental and social impacts and avoiding riparian issues.

The project was put on hold until 2007 when – with support from the PPP and transaction advisory unit of IFC – the Government concluded that the modified design offered the best prospect for a pilot PPP project in hydropower. Environmental, Social, Health, and Safety assessments were prepared in line with the Equator principles, and several rounds of public consultations were conducted with the affected communities.

In January 2008, the prequalification phase began, resulting in 12 submissions, 10 of which met the prescribed criteria. Nine international companies took part in a bidders conference in April 2008 and performed extensive technical and legal due diligence. In the following months, the draft project agreements were negotiated with potential investors in a transparent and nondiscriminatory manner,

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<sup>3</sup> Adapted from: <http://www.pidg.org/resource-library/case-studies/ifc-smart-lessons-ashta-hydropower.pdf>

incorporating some of their most substantial comments. The Government was initially reluctant to share any of the project risks: besides the hydrological, geological, environmental, and land-acquisition risks typically associated with HPPs, Ashta is totally dependent on water releases from upstream hydropower plants (state-owned). Ultimately, the Government accepted to share some of the PPP risks and agreed to sign a 35-year concession agreement which included “standard” Material Adverse Government Action clauses, a 15-year “energy only” power purchase agreement (“PPA”), and a Cascade Coordination Agreement, which provides for regular water releases under normal flow, and sets clear rules for information sharing and crisis management in case of extraordinary events such as floods.

In June 2008, two international investors submitted technical and financial bids. The project agreements provided a clear risk allocation framework and high-level output specifications for the plant, allowing bidders sufficient flexibility to propose alternative technological solutions, within clearly defined boundaries. Technical proposals were evaluated on a pass or fail basis, leaving no room for ambiguity.

The winning bidder assumed the risk of installing an innovative type of low-head turbines which required minimal civil works and shorter construction periods, and was able to offer the lowest PPA tariff. The contract signed in September 2008.

## **2. Environmental and Social considerations in the development of Hydropower plants**

Hydropower plants (HPPs), and in particular those with a reservoir, are often designed bring to bear important local benefits to society: renewable energy generation, decreased risk of flooding, increased availability of water for irrigation. On the other hand, the development of HPPs often causes a number of negative environmental and social impacts: loss of access to water for local communities (a common good) because the water is piped and released only after it flows through the turbines, e loss of land due to flooding of the reservoir, which is often prized for its biodiversity (wetlands), economic and physical displacement of people, and the transformation of the landscape, with all its emotional connotations.

Regardless of whether the green-field HPP is developed through a PPP or directly as a public investment, the careful, complete assessment and eventual mitigation of these negative impacts is a necessary precondition for the decision to develop a new hydropower site. This process can be complex, expensive, time-consuming, and inherently risky.

**The “need” for the project needs to be carefully assessed, documented and communicated, to the broad stakeholder community.** For example, the Bujagali Falls HPP project in Uganda was harshly opposed for a number of years by international environmental NGOs. The Ugandan government was able to respond to this criticism by sharing with the public a world-class Least Cost Electricity Generation Expansion<sup>4</sup> Analysis that demonstrated that the HPP was the

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<sup>4</sup> The output of a Least-Cost Electricity Generation Expansion Analysis is list of new generation plants (chosen among a pool of candidates) and the optimal sequence for their development, calculated to



cheapest new source of energy available to meet the growing demand. Because of the localized negative externalities of hydropower projects, the profit (or economic development) motive is generally deemed insufficient by the public to justify the transformation of a waterfall into a power plant. The best practice, reflected by the Hydropower Sustainability Assessment Protocol requires the demonstration of the specific need for the development of the hydropower resource through a Least Cost Electricity Generation Expansion Analysis that considers all alternative generation candidates. Governments and developers should therefore only embark in a hydropower transaction only if a least-cost electricity generation expansion analysis clearly demonstrates the need for the project.

**Complete the strategic environmental and social assessment process, before involving the private sector.** In the case of the development of new TPPs, the risk of not meeting national or international pollution control and environmental standards can be mitigated almost entirely by requiring developers to invest in modern emission control technology. The very “localistic” nature of the impacts of HPPs, on the other hand, is such that environmental and social impacts can rarely be materially mitigated through improved design or technology. In addition, depending on the environmental impacts of the projects, the costs for environmental and social mitigation are often substantial and – when properly accounted for - can make the project financially not feasible. It is therefore best practice, a strict requirement of all multilateral finance institutions and most international project finance lenders, and a legal requirement in many countries, to perform a systematic assessment of the environmental and social impacts (“SEA”) of the project and to incorporate any environmental and social considerations resulting from such assessment before any plan for the development of a new hydro resource is approved. This means that a SEA should be required for the official endorsement by the government of any new hydropower project and for the amendment or approval of the associated land planning instruments.<sup>5</sup>

Different national and international standards exist for the development of SEAs: a best-practice assessment typically needs to consider the following aspects:

① The definition of the boundaries of assessment and alternatives to be analyzed;

A description of the current state of the environment (including a biodiversity baseline study, which may cover the four seasons);

A cumulative assessment of the potential environmental and social impacts of the project, including the upstream and downstream reaches of the river and an assessment of the impact on other users of the water resource;

An analysis of the potential economic and physical resettlement and a social impact assessment

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minimize the present cost of power generation over certain period of time.

<sup>5</sup> Once the project concept is approved and the investor/developer has been identified, the approval of the final design and the authorization to start construction is normally subject to the preparation and approval of a more detailed environmental impact assessment.

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(including informing and consulting with the public);

A description of the potential transboundary issues for international waterways (which may trigger the requirement for notifications);

The analysis of impacts on cultural heritage due to flooding;

Considerations of environmental flows;

The definition of a set of monitoring indicators; and

A set of recommendations for decision making

### **3. Brazil**

#### **The Project**

SPP Esmeralda – A small hydro power plant (22.2 MW), selling energy for the PROINFA (Programme of Incentives for Alternative Electricity Sources) Program, designed to incentivize alternative energy sources. The plant has been partially financed by BNDES.

#### **Public-Private Participants**

##### **Public Sector:**

BNDES (Banco Nacional de Desenvolvimento Economico Social – Social-economic development bank),  
Eletrobrás Private Sector:

Engevix Engenharia S/A, an engineering consulting firm.

#### **Lessons Learned**

##### **Energy Policies**

Existing policies provided assurance that the project could obtain long-term Purchased Power Agreements (PPA) within the scope of PROINFA, that financing would be provided by BNDES, and that incentives and guarantees for investors would be available. These policies positively affected the decision to proceed with the project.

##### **Financing**

Engevix Equity: about 30%

BNDES Funding: about 70%

Competitive prices and a 20-year term under a PPA.

PPA: Eletrobrás (through incentive program PROINFA). PROINFA, administered by the national power

utility Eletrobrás, encourages the development of renewables (wind, biomass and small hydroelectric plants) by offering long-term contracts for the electricity generated.

#### **Long-term Policy Framework**

The private sector can contribute, with their experiences, to sectoral policies that provide for the development and application of new, more efficient technologies with lower carbon output.

Public participants provide a stable, transparent regulatory framework that allows for societal participation.

## **4. Cape Verde**

### **The Project:**

Cabeólica, S.A. is a Cape Verdean company created in 2009. It is based on a Public-Private-Partnership (PPP) established in 2008 between InfraCo Limited, a privately managed donor-funded infrastructure development company, the Government of Cape Verde (Ministry of Tourism, Industry and Energy) and Electra, S.A.R.L., the local utility company.

The PPP administers the development, financing, construction, ownership and operation of four wind farms in Cape Verde, with a total installed capacity of 25.5 MW, distributed throughout the islands of Santiago (9.35 MW), São Vicente (5.95 MW), Sal (7.65 MW) and Boa Vista (2.55 MW).

The main objective of the Cabeólica PPP is the production of electricity from wind for the national grid under an independent producer regime.

The PPP envisions Cabeólica as a solution to the rapidly increasing energy demand, while also acting to reduce the import of expensive and environmentally polluting fossil fuels. Furthermore, the Cabeólica Project proposes to diversify the national energy matrix and reduce pressure on the public sector in financing the energy growth of the country alone and complying with international environmental commitments.

In 2010, Africa Finance Corporation, a Pan-African development finance institution and Finnish Fund for Industrial Cooperation, began their participation in Cabeólica as majority investors and fundamental strategic partners.

Having secured long-term loans from African Development Bank and the European Investment Bank, Cabeólica signed a full Engineering Procurement Construction contract (EPC) and Service Agreement with Vestas. The EPC envisioned the construction of the four wind farms including the erection and installation of all 30 wind turbines procured; the construction and installation of roughly 30 km of transmission lines for connection of each wind farm to the respective island's utility electricity grid; the construction of a total of roughly 15 km of external and internal access roads and 4 control station buildings.

At the end of 2011 three of the four wind farms began producing roughly 30% of the energy

consumed in the respective islands. The fourth and last wind farm was scheduled to begin production in April 2012.

The project is designed as a Clean Development Mechanism (CDM) project. Cabeólica has completed its PDD (project design document), which has been accepted for publication on the UNFCCC website by the CDM Executive Board. It is currently undergoing validation.

As the first commercial scale PPP wind farm in Sub-Saharan Africa, the Cabeolica Projects won the Best Renewable Project in Africa Award at the African Energy Awards in 2011.

### **Public-Private Participants:**

#### **Public Sector:**

The Republic of Cape Verde;

Electra, S.A.R.L.; majority Government-owned utility company

#### **Private Sector:**

African Finance Corporation

Finnish Fund for Industrial Cooperation Ltd. (Finnfund)

InfraCo Limited (Developer of the project)

### **Lessons Learned**

#### **Energy Policies**

Since the 1990's, the Government has been seeking to increase the installed wind energy capacity in the country. However, due to limiting technical and know-how factors and the lack of strategic partners in the industry, it was unable to complete this goal until now. In 2006, together with the expansion of the energy grid, coupled with technical studies and development of a wind and solar atlas, the Government of Cape Verde (GoCV) set the target of reaching 25% Renewable Energy by 2011, which created a good basis for the Cabeólica PPP and decision-making.

The electricity system is a Single Buyer system, which constitutes a clearer framework for ensuring the off-take volumes and pricing, compared to a liberalized competitive power market. The project financing relies on a tailor-made long-term Power Purchase Agreement (PPA) supported by certain GoCV guarantee arrangements and tax and duty exemption agreements that secure the normal activity of the company through at least 20 years.

At the moment Cabeólica is financially self-sustainable, with no public sector financial support, and its wind farms currently in operation are contributing a large share of renewable energy into the electrical grid network. Furthermore, Cabeólica is supplying 25% cheaper electricity than other available options. These positive factors, coupled with the continuous acquisition of know-how, place the company in a strategic position to support GoCV in its target of reaching 50% installed renewable energy capacity by 2020.

Financing

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Cabeólica's investments are based on the Project Financing scheme with 30%-70% equity-debt ratio. The PPP had a key role in establishing the financing by facilitating the long-term PPA with Electra, and by providing the supporting guarantees and tax exemptions.

InfraCo Limited, as the main developer of the project, created the dynamics behind the financial project by identifying investors to take the risk of investment and assuming a shareholding position, as well as, identifying international financial institutions to assume the financing.

The main investors (Africa Finance Corporation; Finnish Fund for Industrial Cooperation and InfraCo Limited) invested roughly € 20 million.

The main lenders were the European Investment Bank and the African Development Bank. They provided loans of roughly € 45 million in total.

### **Replicability**

This project is the first PPP in Cape Verde. It was design in such a way that its structure could be replicated in other power projects and/or across other industry sectors in the nation.

The Cabeólica project is also the first PPP in the wind energy sector in Sub-Sahara Africa, and is being studied by other countries for replication. The PPP plays a key role in providing conditions acceptable for private equity and debt financing. In countries in which sufficient political will exists in combination with a transparent environment between the public and private partners, this project can be successfully replicated.

The main roles which the Cabeólica PPP plays in ensuring replicability of similar projects are:

1. Participation of solid, transparent, high-profile public and private partners.
2. Reduction of the pressure on the public sector to fund the expansion of energy generation capacity alone.
3. The incentive for the constitution of a long-term off take agreement to ensure predictable and transparent cost planning.

### **Long-Term Policy Framework**

This PPP can have a positive influence on private financing and private companies investing in developing the electricity supply systems, thus providing additional financial and business know-how resources to complement the often inadequate public sector resources. In the medium term this will also help to introduce competition into the electricity market.

Furthermore, during the development phase of the project, the company aided the GoCV in establishing its Designated National Authority (DNA). The creation of this organ will now facilitate further clean energy investments which will benefit from potentially positive CDM evaluation.

Besides the establishment of clear renewable energy capacity installation targets, no new policies were developed specifically to ensure the success of the project. However, in 2006, 2 decrees were established to refine policies regarding electricity production with some slight benefits to renewable energy production.

In 2011 a strong decree was created to establish certain incentives for renewable energy development which includes issues of land planning, taxation, environmental licensing and warranties. In Cabeólica's particular case, the search for private investors was hugely simplified due to the project being low carbon-emission. This factor in the framework is seen as an extremely positive incentive.

Now, public actors have to ensure that policies are enforced and the PPA and other commitments are honoured without changes, in order to encourage further private financing.

Moreover, the public sector has to ensure the financial strength of Electra, the national utility company, by improving the legal and regulatory framework for retail electricity distribution, especially for billing and collection, and by developing price regulation policies and practices.

### **Research and Development**

Technical, commercial and organisational R&D is needed in order to increase the wind (and solar) power penetration rate. Currently the local grid stability and spinning reserve requirements limit renewable energy penetration to around 40-50%. A partnership such as this, directed towards renewable energy production, must encourage continuous development of the grid control systems and performance and integration of specific equipment (in this case wind turbine) into the grid, research into electricity storage, training and know-how transfer to its employees as well as utility employees in order to maximize stable production and minimize losses. This sort of promotion of R&D and training will be primarily encouraged from the private actors and must involve the public actors to be effective.

### **Conclusions**

A successful PPP provides a firm framework to facilitate project financing. The renewable energy sector is particularly demanding in terms of capital investment, as well as heavily regulated. Ensuring a public-private partnership is an important way to overcome these two important obstacles.

With the involvement of the government and the utility, the regulatory and commercial risks are reduced to a minimum and it is easier to develop and identify solid private partners for project finance. During the operational phase and in business management, public sector involvement is not required.

It is important to state that PPPs will fail if they are used for political purposes, or if the public partner is able to change the rules retroactively.

## **5. Ecuador**

### **The Project**

San Cristóbal – Galápagos 2.4-MW wind power project, complemented by solar photovoltaic (PV) systems and training

First large-scale wind project in the Galapagos

Built on a UNESCO World Heritage site, complementing the United Nations Development Programme

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(UNDP) renewable energy program for the Galapagos Islands

Supplies an average of 40% of the island's electricity needs

### **Public-Private Participants**

#### **Public Sector:**

The Ministry of Electricity and Renewable Energy of the Republic of Ecuador

Elegalapagos EP, the government-owned electricity utility for the Galápagos islands

#### **Private Sector:**

Eólica San Cristóbal S.A. – EOLICSA: the owner and operator of the San Cristóbal Wind Power Project

The company is owned by the San Cristobal Wind Project Commercial Trust: American Electric Power (U.S. utility) and RWE (German utility) are the “Settlers” and Elecgalapagos EP is the Adherent and the Beneficiary. AEP and RWE are members of the e8.

### **LESSONS LEARNED**

#### **Energy Policies**

Some policies on tariffs as subsidies for renewable energy, permitting and environmental issues had to be reviewed to facilitate project development.

Public agencies were open to cooperate with private initiatives for the development of the project, particularly because of the importance of the Galápagos Islands as a World Nature Area.

Rural Electrification Fund (FERUM Fund) rules were modified to permit financing of renewable energy projects.

#### **Financing**

Funds from the e8 companies with complementary financial support from United Nations Foundation (UNF) were provided as grants.

A commercial trust was structured to administer and manage the project funds. A private Ecuadorian financial agency was designated as the Trustee.

The Ecuadoran government contributed with financial resources from the FERUM Fund. • Ecuadoran law allowed the project to receive a percentage of income tax as voluntary donations from Ecuadoran taxpayers.

Interests earned by funds were also a component of the financial structure.

A small financial gap was filled with a short-term loan provided with UNF funds through UNDP.

## 6. Laos

### The Project

Nam Theun 2 Hydroelectric Project – a 1070-MW power plant on the Nam Theun River, a tributary of Mekong River, with a dam and a 450-km km<sup>2</sup> reservoir, 200km high voltage transmission lines. 95% of the power is exported to Thailand, 5% is for domestic use in Laos.

A sustainable hydropower project with:

Financial compensation and help with population resettlement:

- New infrastructures (electricity, housing, roads, schools)
- Sanitation (dispensaries, drinking water)

Transition to new economic activities (agriculture and livestock breeding, fisheries, etc.) with a targeted doubling of families' incomes by 2015

Protection of cultural and religious heritage sites.

Environmental commitments:

- Water quality management
- Biodiversity protection on 4000km<sup>2</sup>

### Public-Private Participants

#### Public Sector:

Government of Lao People's Democratic Republic, 25% shareholder:

- Commits to use part of money generated for poverty alleviation programs
- A state-owned company was established to off- take 5% of electricity generated

Electricity Generating Authority of Thailand, 25% shareholder:

- Off-taker of 95% of electricity generated

International financial and development institutions:

- World Bank with a \$20M grant to Government of Laos for social and environmental issues and \$130M guarantees to financiers for political risks
- Asian Development Bank
- European Investment Bank
- Agence Française de Développement

#### Private Sector:

Electricité de France (EDF), 35% shareholder

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Ital-Thai Co, 15% shareholder

Contractors: EDF (Head), Ital-Thai / Nishimatsu (Civil works), ASEA Brown Boveri/ General Electric / Clemessy (power station), Mitsubishi / JPower (transmission lines)

Financiers: 16 Thai and international commercial banks

## Lessons Learned

### Energy Policies

Large sustainable hydropower is possible.

Energy AND development should be combined into a consistent plan.

Choice of energy is key:

- Costs and resources should be adapted to local conditions (hydro is cheap and 98% of Laos' hydro potential is untapped).

Needs must be clearly identified:

- Fuel Laos development through serving as "regional powerhouse" and serve important Thai electricity needs.

### Financing

The cost of the project was a third of Laos' Gross Domestic Product.

Need for subsidies to compensate for low local purchasing power.

Regional cooperation is useful (Thailand as solvable off-taker for electricity).

Additional financing required to uphold social and environmental sustainability.

Risks and roles must be clearly distributed among stakeholders:

- Investors shoulder industrial risks
- MDA provide financial guarantees and shoulder policy risk through sustainability conditions set to loans to government
- Governments guarantee integration of the project into a consistent development plan

### Replicability

Nam Theun has created a replicable model: Nam Ngiep and Nam Ngum 3

### Long-Term Policy Framework

Hydropower is affordable, clean and has strong potential in developing countries.

The economics of hydro support an acceptable rate of return for banks.

Sustainability issues need to be addressed (compliance with International Hydropower Association

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Guidelines).

The infrastructure must fit into a consistent long-term development plan and technology choices must be consistent with local/regional context.

Support by international institutions can be decisive to prompt action by authorities.

### **Research and Development**

Research helped assess need for compensation to local populations, e.g., through assessment of forest carbon stocks and areas to be protected from deforestation.

The project's net GHG footprint (biomass decay) is 6590t / year methane (mainly from swamps) before reservoir is filled; a total saving of 200Mt GHG over 100 years compared with Combined Cycle Gas equivalent.

### **Conclusions**

Large hydro can be compatible with highest sustainable development criteria.

Access to modern energy is a key element of development. Both must be addressed together.

Subsidies can be needed to ensure economic viability in the long run.

Risks appropriately distributed:

- Government
- Sponsors
- Insurers
- Political risk guarantors

Development plans must be adapted to local and regional circumstances and integrate energy with governance, capacity building, economic development, channeling of funds, etc.

Support by international institutions can be key for local authorities to actually implement those plans.

## **7. Hevel Llc Project**

### **Partnership Description**

Hevel LLC is an example of institutional public-private partnership in Russia in the area of solar energy. Hevel LLC is the largest integrated solar power company in Russia, which built the first Russian solar power station of industrial scale and the first full-cycle plant producing solar photovoltaic (PV) modules.

Hevel LLC being a vertically integrated holding offers full-scale services from the production of solar PV-modules to engineering, construction and maintenance of solar power plants.

The production facility of Hevel LLC is located in the Chuvash republic and is capable of producing to 1 million solar PV-modules a year which is equal 100 MW. These days the existing production line is being renovated in order to allow the migration to the new HJT technology (Hetero-junction with Intrinsic Thin-layer). HJT modules will combine the best characteristics of thin-film and crystalline silicon elements. Industrial samples of our new technology already now demonstrate the efficiency of 20.3%.

Besides high efficiency, this combination allows to leverage all benefits of crystalline (high efficiency, absence of light-induced degradation) and thin film solar technologies (low production costs, high efficiency while exploited at higher temperatures, better diffused light reception and silicon savings in a longer term after transferring to thinner wafers).

The migration to the new HJT technology will result in the increase of our manufacturing plant's production output up to 160+ MW per year.

### **Public And Private Sector Participants**

Hevel LLC is a joint venture of Renova Group and Rusnano, founded in 2009.

Public partner (49% of shares) – Rusnano State Corporation (before 2011), Rusnano Open Joint Stock Company (after 2011) – a state-owned JSC, CEO Anatoly Chubais.

Private partner (51% of shares) – Renova Group, a Russian conglomerate, whose main owner and president is Viktor Vekselberg.

### **Projects Implemented**

2013: Hybrid diesel solar power system - 100 100 kW (60 kW – PV modules and 2 diesel generators 40 kW each (one general and another one is reserve) (Altai Republic, Russia);

2014: first on grid solar power station in Russia – 5 MW Kosh-Achgayskaya Solar Power Station 1 (Altai Republic, Russia);

2015: commissioning of 5 MW Perevolotskaya Solar Power Station (Orenburg Region, Russia);

2016:

5 MW Kosh-Achgayskaya Solar Power Station 2 (Altai Republic, Russia);

5 MW Bugulchanskaya Solar Power Station 1 (Bashkortostan Republic, Russia);

10 MW Buribaevskaya Solar Power Station 1 (Bashkortostan Republic, Russia).

Currently under construction:

10 MW Grachevskaya Solar Power Station (Orenburg Region, Russia) – March 2017;

10 MW Pleshanovskaya Solar Power Station (Orenburg Region, Russia) – March 2017;

5 MW Bugulchanskaya Solar Power Station 2 (Bashkortostan Republic, Russia) – March 2017;

5 MW Bugulchanskaya Solar Power Station 3 (Bashkortostan Republic, Russia) – December 2016;

10 MW Buribaevskaya Solar Power Station 2 (Bashkortostan Republic, Russia) – March 2017;

5 MW Ust'-Kanskaya Solar Power Station (Altai Republic, Russia) – December 2016;

25 MW Sol'-Ilezkaya Solar Power Station (Orenburg Region, Russia) – April 2017.

### Further Projects

There are plans to construct several solar power stations (with combined capacity over 349 MW till 2020) in Altai Republic, Bashkortostan, Buryatiya Republic, Orenburg, Omsk, Saratov Regions, Zabaikalskiy Krai and other regions of Russia.

### Conclusion

In Russia, institutional public-private partnerships in the area of RE allow to:

- implement large-scale infrastructure projects;
- ensure that the public sector retains at least some control over the project company;
- get access to project financing from Russian financial institutions for projects in and outside Russia;
- get support from private and governmental institutions in the development of projects of various scope and complexity.

It should be taken into consideration that solar energy sector in Russia is still at the initial stage of its development, and there is much potential there.

## 8. Kuril Islands Geothermal Energy Station Concession

### Parties To The Project

Public partner (concession grantor) – Administration of South Kuril Town District Municipality.

Private partner (concessionaire) – Dalenergoinvest LLC.

Third party acting on the side of the concession grantor – State Budgetary *Institution "Board for the Implementation of Federal Socioeconomic Development Programme in respect of the Kuril Islands, Sakhalin Region"*.

### Project Description

The project involves reconstruction and operation of existing geothermal energy facilities and construction and operation of new geothermal energy facilities on one of the Kuril Islands, Kushanir Island (Mendeleevskaya Geothermal Energy Station).

The amount of investment is 1.4 bn RUB (approx. 22.5 mln USD). A major portion of it will come from the concessionaire (equity and debt finance), but 400 mln RUB (approx. 6.5 mln USD) will come from the State Budgetary Institution "Board for the Implementation of Federal Socioeconomic Development Programme in respect of the Kuril Islands, Sakhalin Region", which acts on the side of the concession

grantor as the third party to the concession agreement.

Initially, the grantor announced a two-staged tender pursuant to the requirements of Federal Law No. 115-FZ "On Concession Agreements" dated 21 July 2005. Dalenergoinvest LLC was the only bidder, and therefore, it has been proclaimed the winning bidder, and in May 2013 the grantor has issued a decision to enter into the concession agreement on its basis.

The concessionaire will construct, reconstruct, operate and maintain 7.4 MW energy facilities on the slope of a volcano. It has drilled five wells over 2 km deep and will drill two more wells over 1.2 km deep.

Construction works in respect of some facilities are performed in parallel by State Budgetary Institution "Board for the Implementation of Federal Socioeconomic Development Programme in respect of the Kuril Islands, Sakhalin Region" and its contractor acting on the basis of a state contract (entered into on the basis of public procurement laws, not concession laws). Upon completion of such works and registration of grantor's ownership rights to the constructed facilities, the grantor will transfer them into the concessionaire's possession for operation and maintenance.

As described above, a part of financing for the project comes from public sources. These are the funds allocated by the Russian Federation for financing the State Programme of Sakhalin Region "Economic Development and Innovation Policy of Sakhalin Region" (Sub-Programme "Economic Development of the Kuril Islands") from 2014 to 2020.

The term of the concession agreement is seven years.

Obligations of the grantor include allocation of land plots to the concessionaire (on the basis of a lease agreement), provision of access to the existing facilities, issuance of construction licenses free of charge, etc.

The investment programme of the concessionaire will include all its capital expenses, which will be compensated by means of including the respective amounts in the amount of energy tariffs as prescribed by Russian tariff laws. If the concessionaire does not receive full compensation of its expenses through end-user payments during the term of the agreement (e.g. due to lack of demand), the grantor will pay such compensation to the concessionaire directly in equal monthly portions within three-year term from the expiration of the concession agreement.

The concession agreement includes guarantees for the concessionaire that in case of change in law or another change of circumstances negatively affecting the concessionaire, the concessionaire shall be entitled to demand amending the concession agreement accordingly.

### **Conclusion. Lessons Learned**

This is the first PPP in the area of geothermal energy to reach commercial close. It shows that it is possible to implement renewable energy PPPs in Russia on the basis of concession legislation (just like hundreds of projects in other areas currently implemented as concessions in Russia), even though area-specific legislation is underdeveloped.

The state support mechanisms stipulated in the concession agreement provide some comfort to the investor (and lenders) and may be used in other prospective RE PPPs. However, more substantial and

detailed contractual obligations on state support may be required for other projects.

## 9. Honduras – Renewable Energy PPPs

The Honduran government has pushed to open up generation and distribution to foreign investment and diversify the country's energy mix away from thermal and hydroelectric. In 1994, energy laws were reformed, but it resulted in little investment.

A 2007 law to promote renewable energy generation provided 20-year income tax breaks for renewable power plants, and waived import tariffs on renewables components. Crucially, the national utility, ENEE, was required to enter into 20-year PPAs with renewable energy projects. All PPAs are approved by congress and become law, offering greater political and legal certainty to investors.

In order to further incentivise swift development, in 2013 the government launched a tariff of \$155 per megawatt-hour for the first 300 megawatts of PV capacity brought on-line by July 31, 2015.

The country's first utility-scale solar project, the 144-megawatt Nacaome Park operated by Compañía Hondureña de Energía Solar and Solar Power began operations in May of 2015. For all of 2015, approximately 460 MW were installed. A total of 620 MW of solar project have been approved to be installed by the end of 2016.

The combined effect of the PPP incentives, anchored by the 20-year PPA offering, leveraged more than \$1 billion in investments in PV in Honduras.

## 10. Morocco- Ouarzazate CSP Case Study

In 2009 Morocco launched the Moroccan Solar Plan, with the goal of building 2 GW of solar capacity by 2020. The Moroccan Agency for Solar Energy (MASEN) was established as a public-private agency tasked with implementing the Moroccan Solar Plan by developing solar power projects, contributing to the development of national expertise, and proposing regional and national plans on solar energy. Under the Renewable Energy Law, electricity may be produced and exported by private entities.

One example of a project initiated by MASEN is the Ouarzazate project, a planned 500MW solar power plant. The stakeholders include:

MASEN, expected to contribute \$883 million in aggregate during the operational period,

International Finance Institution (IFI) donors, committed to over \$1 billion in loans for construction, and

A consortium of private developers, committed to invest \$190 million in equity.

The Ouarzazate I project had two goals:

1. Install CSP at a scale that tests and demonstrates the storage technology component, significantly reduces cost, and delivers secondary economic benefits, such as local

manufacturing, energy security, and reduction of carbon dioxide emissions; and

2. Attract and increase private-sector backing and enhance the availability of capital and 'know-how' for CSP portfolios.

The PPP process was effective because of several key factors:

Strong public support and the close alignment of key public partners

Significant financial and technical contributions from IFIs

Strong engagement and coordination of donors

A carefully designed public-private partnership model

A project design built on past lessons learned

In particular, the public-private partnership model carefully allocated risk between public and private players. For example, the private developer bears construction and operational risk while the Government of Morocco bears electricity market risk (revenue risk). MASEN acts as both equity investor and power purchaser (off-taker) and thus has the ability to align public and private objectives.

Commercial bids were submitted for Phase 1 (160MW) at the following levelised tariffs:

ACWA Power (Saudi Arabia), Aries Ingeniería y Sistemas (Spain) and TSK Electronica y Electricidad (Spain): MAD 1.597944 (18.87 USD cents) a kWh

Enel (Italy) and ACS Servicios Comunicaciones y Energia (Spain): MAD 2.057201 a kWh

Abeinsa (Spain), Abengoa Solar (Spain), Mitsui (Japan) and Abu Dhabi National Energy Company (UAE): MAD 2.057503 a kWh

It is reported that ACWA's winning bid was based on lower investment costs, higher production forecasts, and ACWA's willingness to accept a lower rate of return, in part to achieve a first-mover advantage, and in part due to the successful mitigation of risk by MASEN through the PPP program.

The Ouarzazate Phase I project began operations in February, 2016.

## 11. South Africa - REIPPP

The Renewable Energy Independent Power Producer Procurement Program (REIPPPP), has mobilized substantial private sector expertise and investment into grid-connected renewable energy in South Africa at competitive prices.

The South African experience demonstrates that private sponsors and financiers are eager to invest in renewable energy if the procurement framework is clear and transparent, transactions are reasonably profitable, and key risks are mitigated by government. REIPPPP also highlights the need for effective program champions with the credibility to interact convincingly with senior government officials,

effectively explain the program to stakeholders, and communicate and negotiate with the private sector.

Bidding for each window was run as a reverse auction. The Department of Energy issued requests for proposals, and bidders offered prices for delivery of energy. The two main evaluation criteria were price (70%) and social and economic development (30%). The percentage contribution towards social and economic development objectives increased over time.

The main elements of the PPP arrangements were the PPA between the generator and Eskom, including a price partially indexed at the consumer price index, with no capacity payment (but with deemed energy payments), and payments in Rand. The Implementation Agreement provided for indemnities and compensation events to the IPPs for events of default on the part of Eskom or the government and regulated non-performance on the part of the IPP, including non-performance of socio-economic development obligations. The Government Support Framework Agreement among Eskom, the National Treasury and the Department of Public Enterprises regularised the relationship between Eskom and the Government in respect of support to Eskom for its obligations under the PPA, should support be required, functioning as a risk mitigation instrument which created obligations to monitor the programme and provided opportunities for early warning signals to facilitate problem solving and mitigate risks. The Direct Agreements with regard to the PPA and Interconnection Agreement provided for step-in rights for lenders.

REIPPPP resulted in a fast build-out of generating capacity. The size and structure of the bidding process ensured that there would be multiple bid winners, which incentivised private sector participation. It also demonstrated that renewable energy procurement programs have the potential to leverage local social and economic development—although some of the program's economic development requirements were controversial, they generated critical political support for REIPPPP.

REIPPPP largely eliminated the risk, common in competitive tenders, of under-bidding to win contracts by requiring the bids to be fully underwritten with debt and equity financing.

Consecutive rounds of bidding with substantial capacity allocations built confidence in the program and brought prices down significantly. Each window was oversubscribed, and the number of bidders and number of megawatts bid grew as the process advanced. Additionally, certain exemptions were allowed from national PPP regulations, and a Preferential Procurement Policy Framework Act accelerated the program, while ensuring transparency and quality.

The institutional setting for the development of the REIPPPP was also critical to its success. Historically, the government had instructed Eskom to contract IPPs, but the effort was unsuccessful, whether due to a lack of capacity or a lack of incentives. The Department of Energy (DOE), by contrast, was responsible for REIPPPP. But DOE also recognized that, like Eskom, it had little institutional capacity to run a sophisticated, multi-project, multibillion-dollar international competitive bidding process, so, DOE sought the assistance of the National Treasury's Public-Private Partnership (PPP) Unit to manage the process. A small team of technical staff from DOE and the PPP Unit established a project office, known as the DOE IPP unit, which functioned effectively outside of the formal departmental structure of national government to act as a facilitator for the REIPPPP process.

The REIPPPP was successful because it was supported by certain key contextual factors:



A primary policy environment that empowered the Minister of Energy, in consultation with the regulator, to determine the need for new generation capacity, the energy mix, and the permitted customers and modes of electricity sales. It also allowed take or pay arrangements and required that new capacity must be purchased through a fair, equitable and competitive tender and public participation.

A clean energy context within which renewable energy targets were included in the 2010 Integrated Resource Plan.

Planning for new generation capacity developed after an extensive public consultation process. The objective of the Integrated Resource Plan was “to develop a sustainable electricity investment strategy for generation capacity and transmission infrastructure for South Africa over the next twenty five years.”<sup>6</sup> The large generating base allowed the cost of the program to be spread out across a much larger volume of generation, improving affordability.

The application of learnings from an earlier gas-peaker IPP procurement process.

On the downside, the REIPPPP lacked sufficient emphasis on addressing transmission infrastructure. Grid connection and curtailment risk resides with Eskom (after a short period of excused down-time), and given the utility’s financial constraints, solutions will have to be found to facilitate transmission and distribution infrastructure expansion. Grid constraints have hampered the success of the program in its later stages.

## 12. Tuvalu

### The Project

Tuvalu PV Project – A project to promote renewable energy generation in the Pacific islands. The project involved the installation of a 40-kW solar power generation plant, and an education component to facilitate maintenance and replacement by local engineers.

The project sends a symbolic message to the world to address global warming.

### Public-Private Participants

#### Public Sector:

- Government of Japan, Government of Tuvalu

#### Private Sector:

- Kansai Electric Power Co., Tokyo Electric Power Co., Pacific Power Association (PPA), Tuvalu Electricity Corporation

### LESSONS LEARNED

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<sup>6</sup> Department of Energy, Integrated Resource Plan for Electricity 2010-2030, promulgated 06 May 2011

## Financial

Preparatory survey prior to construction needs to be very precise to minimise costs associated with over- or underestimations leading to additional and expensive material transportation.

75% was funded by Kansai Electric's donation, and the other 25% was funded by the grassroots grand aid (financial assistance scheme for development projects designed to meet the diverse needs of developing countries offered by government of Japan).

## Replicability

Education on providing spare parts and tools can be reused on similar projects.

The implementation of solar power systems on remote islands requires longer time estimation and strong logistical management (i.e., construction material transportation arrangements to the island, etc.).

## Research and development

We learned to consider salt effects (rust) not only for the PV system but also the air conditioning systems.

Temperature control in the inverter room needs close monitoring in tropical locations like Tuvalu to avoid significant drops in operating rates due to high temperatures.

Facilities' resistance against salt and water corrosion damage must be addressed during the construction phase and closely monitored upon commissioning.

## Conclusions

Communication with the people of the local community and the government is the key to success. It is important to share information, provide education, and assure adequate awareness of the project.

## 13. Uruguay

### The Project:

The Uruguayan government, through its public utility UTE, has decided to award the construction of 450 MW of wind power capacity.

UTE and the Uruguayan government would like to further participate in the wind power market, which is considered of strategic interest for the future of the country's electricity supply.

To this end, UTE plans to tender the construction and operation of up to three onshore wind farms. They will be constructed by private partners and will have a maximum installed generation capacity of 180 MW each.

After commissioning, UTE will lease the wind farms. The private partners will assume the responsibilities of services and maintenance. After five years, the public utility has the option to buy the farms or to extend the leasing for a further 15 years, at the same time extending the service

contracts for a maximum of nine years.

Contracts will be signed in September 2012.

Over 790 MW of wind power generating capacity has been awarded in Uruguay since early 2011. These wind farms will be installed as well as operated by private stakeholders through power purchase agreements.

### **Public-Private Participants:**

#### **Public Sector:**

Administración Nacional de Usinas y Transmisiones Eléctricas, UTE

#### **Private Sector:**

To be determined

### **Lessons Learned**

#### **Energy Policies**

Uruguay has put in place a variety of policies to increase the amount of renewable energy, especially wind power and biogas.

The private sector can participate in different ways. For example, a public-private partnership law exists that is aimed especially at infrastructure projects. In the leasing scheme planned by UTE, tax incentives are in place for the private partners.

#### **Financing**

The wind farms will be financed by the private partners. No special options will be offered for financing the projects, as market conditions are deemed sufficiently attractive.

However, tax exemptions for project developers do exist.

Moreover, incentives for early commissioning of the wind farms will be available.

#### **Replicability**

This project is replicable as a whole.

#### **Long-Term Policy Framework**

This is the first leasing scheme in Uruguay in the wind power sector. The experience from this will be valuable for future projects in renewable energy in the country.

### **Conclusions**

Uruguay has a high potential for wind power. Moreover, wind power in the country is cheaper than fossil fuels for power generation.

To reach the target of 30% wind power (60% hydro power, 6% biomass, 4% fossil) in 2015, UTE feels it is necessary to promote this technology further.

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In this respect, the leasing scheme could play an important role, in addition to the already existing possibilities for engaging the private sector.

## Schedule 5 UNECE RE PPP Standards Team of Specialists

### 1. Project Leader

**Ana Hajduka**  
Founder & CEO, Africa GreenCo  
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Email: [ana.hajduka@africagreenco.com](mailto:ana.hajduka@africagreenco.com) or [ana.hajduka@repppstandards.com](mailto:ana.hajduka@repppstandards.com)



In March 2015, Ana was appointed by the UNECE as the Team Leader responsible for a Project Team (comprising about 30 specialists) in charge of developing international renewable energy PPP standards as part of the Sustainable Energy for All agenda. Ana is also a Founder & CEO of Africa GreenCo a UK non for profit company limited by guarantee (Africa Green Regional Energy: Efficient, New and Creditworthy Offtaker).

Africa GreenCo calls for the set-up of a public-private partnership in the form of an independent, regional, renewable energy offtaker. Africa GreenCo would streamline development, mitigate offtake and credit risk and catalyse private sector finance for largescale regional renewable energy development. Africa GreenCo as a concept was included in the recommendations section of the SE4All's Finance Committee Report.

Ana is qualified as a lawyer in both England & Wales and the State of New York, and is an infrastructure and energy professional with more than 12 years' experience in a variety of transactions including project finance, public-private partnerships and project development, working on energy and infrastructure projects in emerging markets. Ana trained with Allen & Overy LLP and went on to work for Fulbright & Jaworski LLP and Trinity International LLP, advising on a diverse range of projects within the energy sector, predominately in Sub-Saharan Africa.

### 2. Project Co-Leader & Editor



**Rene Meyer**  
Independent Procurement & Tender Expert  
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Rene has more than eight years of experience with international procurements and tender practice. For the last three years, he has been the resident legal advisor and tender expert for the GET FiT Uganda program, a private investment-facilitating program for renewable energy projects implemented by KfW. Rene's main responsibility was providing procurement, legal, and other regulatory support for the implementation of the program,

which to date supports 17 renewable energy projects across three RE technologies and more than MUSD 400 million of private investment. As a trained expert in European procurement law, Rene has a deep understanding of international procurement procedures and further has implemented tenders based on various international tender standards and guidelines. He has worked for the World Bank, KfW and on other RE- and ESI- focused assignments with a particular focus on the Sub-Saharan region. His core expertise is the analysis of legal and regulatory environments for RE investment with a sound understanding of both the public perspective and private sector needs. Rene has in-depth theoretical and practical experience in drafting and negotiating transaction documents required for RE PPP project development including Power Purchasing and Implementation Agreements, project finance documents and FIDIC contracts.

### 3. Project Team Rapporteur



**Andrew Gray**  
**Senior Legal Consultant at Trinity International LLP**  
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Andrew Gray is an English qualified solicitor with almost 20 years' experience of working in London-based law firms, most recently as a Senior Legal Consultant at Trinity International LLP, and over 12 years' experience of working on projects in Sub-Saharan Africa. Andrew focuses on infrastructure project agreements in emerging and frontier markets, in particular concession agreements, power purchase agreements and related lenders' direct agreements. Andrew received his LLB (Hons) from City University London and a Legal Practice Diploma from the College of Law, London. He also holds a Bachelor of Economics (Hons) degree from the University of Western Australia.

### 4. Project Team Assistant



**Omaro Maseli**  
**Graduate Student - Sciences Po**  
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Omaro Maseli is a Graduate Student at the Sciences Po in Paris completing her Masters in Public Affairs - Dual Degree with University of Tokyo with a focus on energy. Omaro is also a Law graduate from the London School of Economics and Political Science.

### 5. Public Sector Work Stream Leader



**Alexander Dolgov**  
**Partner at Hogan Lovells**  
**Location: Moscow, Russia**  
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Alexander is a partner heading Infrastructure, Energy, Resources and Projects practice of Hogan Lovells in Russia and CIS. The team of lawyers headed by Alexander have worked on major Russian public/private

partnership projects, and have advised Russian companies and banks on major infrastructure investment projects in Asia, Africa, Latin America, Eastern Europe, as well as in the CIS. Alexander is Chairman of the PPP Committee of the Franco-Russian Chamber of Commerce. He is also a member of the UNECE Team of Specialists on PPP, member of the PPP Committee of the Russian Chamber of Commerce.

Alexander is recommended as a leading lawyer on PPP, project finance, energy and infrastructure by the leading international directories, including Legal500 and Chambers. Alexander was endorsed as a Leading Lawyer by the International Financial Law Review (IFLR1000) in association with Petroleum Economist in the Energy and Infrastructure Guide (from 2014 onwards). He was also announced as one of the best lawyers by the Best Lawyers in Russia in Project Finance and Development practice from 2013 onwards.

## 6. Private Sector Work Stream Leader



**Cathy Oxby**  
**Commercial Director Africa GreenCo**  
**Location: United Kingdom**  
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Cathy is an independent consultant with more than 13 years professional experience in the infrastructure and renewable energy sectors. She trained at Allen & Overy LLP where she worked on a diverse range of project finance transactions spanning energy and infrastructure before moving into a commercial role at HSBC Infrastructure Fund (which became InfraRed Capital Partners). After 6 years of structuring and negotiating equity investments in a wide variety of public-private partnerships and renewable energy projects, she established her own consultancy to help developers, investors and project companies deliver well-structured and efficiently run investments by assisting them through all stages of project development, implementation and operation. She also acts as a consultant to the World Bank.

## 7. Wind And Geothermal Energy Work Stream Leader



**David Munene Mwangi - Energy Consultant**  
**Location: Kenya**  
**Email: Dmmwangi55@gmail.com**

David Munene Mwangi, is an Energy Consultant who took voluntary early retirement in August, 2010 from the Kenya Power and Lighting Company Limited (KPLC), where he had worked for 32 years, rising through the ranks to the position of Chief Manager, Planning, Research & Performance Monitoring, which he held for 9 years. He had held brief for the KPLC Managing Director & CEO in acting capacity on three occasions between October 2008 and April 2010. He was a member of the KPLC power purchase agreement (PPA) negotiating team in 1999-2010 and chairman of the team in 2005-2010.

He was also the Chairman of the Company's Tender Committee from January 2007 to February 2010. In consulting practice, David has provided and continues to provide a wide range of consultancy services in Kenya and eastern Africa. These include, among others, general advisory on energy sector and power sub-sector issues; advice on power purchase agreements, power system planning, power system studies for integrating wind power and other projects into the grid.

David's current and former clients include (amongst others) US AID, KfW, IFC, the World Bank, Re-Consult of Turkey, Tata Power Company of India and two private Kenyan companies developing power plants in the country - Gulf Energy and Lake Turkana Wind Power Company.

## 8. Solar Energy Work Stream Leader



**Monica Lamb**  
**Shearman & Sterling**  
**Associate Project Development & Finance Group**  
**Location: New York, USA**  
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Monica is a lawyer advising on the development and financing of utility-scale wind and solar power plants, as well as other types of power and infrastructure projects. She represents project sponsors (developers), private project-finance lenders, and DFIs. Previously, Monica was as a solar power project developer, including two 550 MW solar power plants which have come online in the past year in the state of California.

## 9. Hydro Energy Work Stream Leader



**Nicola Saporiti**  
**Senior Investment Officer, IFC**  
**Location: Turkey**  
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Nicola Saporiti (Nico) has over 15 years of professional experience working in different functions in the water sector: as a technical consultant advising UK water utilities on water distribution and leakage management projects, as an international investor acquiring stakes in water utilities in Italy, UK, Spain, Mexico and Southern Africa, as a multilateral lender, working for the World Bank in Latin America, and most recently as financial advisor working for IFC in water transactions in Serbia, Madagascar, Pakistan and the Caribbean.

He holds an MBA from IMD, a Certificate in Financial Engineering from the Swiss Finance Institute and is a graduate in Civil Engineering from the Politecnico di Milano University, in Italy.

## 10. Biomass Work Stream Leader



**Vy Manthripragada**  
**Renewable Energy Specialist**  
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Vy Manthripragada is a renewable energy specialist with expertise in project



development and financing. Most recently, Vy served as the Director for Business Development for a U.S. based start-up company, KMR Infrastructure.

In this capacity, she oversaw the company's project pipeline, conducted diligence on potential projects, worked with government officials for regulatory permits, and oversaw relations with private investors and development finance institutions. Over four years she developed a pipeline of 44 megawatts (MW) totaling over USD 100 million in total project costs. Specifically, Vy worked with a team to develop one of the first internationally financed offgrid biomass projects in Tanzania and helped to implement an innovative combined heat and power solution to a multinational offtaker in Sri Lanka. Prior to KMRI, Vy worked in the Office of the Secretary of State, U.S. State Department where she served as an advisor to the Ambassador for Global Partnerships. During her time at the Office of the Secretary, Vy helped to develop the State Department's Impact Investing Initiative and worked on expanding the Department's clean cook stove program. Vy has also held positions with the Overseas Private Investment Corporation, Department of Transportation, Department of Defense and The Advisory Board Company, a healthcare consultancy. Vy received a Master of Science in Foreign Service from Georgetown University and a B.A. from the University of North Carolina.

## 11. Project Group Members



**Beatrice Florah Ikilai**  
**Acting Director PPP Unit**  
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Beatrice is the Acting Director of the PPP Unit of the Ministry of Finance Planning and Economic Development and is responsible for PPP program development, formulation of PPP Policy, Legal, Regulatory and Institutional Framework that governs delivery of PPPs in the country. Beatrice also advises Government on the financial implications of PPP transactions, affordability and bankability of PPP projects. One of the path finder PPP projects is the 78 KM Kampala Jinja Expressway PPP Toll Project.

Beatrice is a certified Finance, a PPP practitioner and an Economist; with over 10 years experience in project finance and project development in divestiture, post divestiture and PPP activities working on power sector projects, tourism sector projects and road sector projects among others. Beatrice is a trained and qualified PPP practitioner from the IP3 USA, University of Queens Land, Australia, University of Pretoria, South Africa, Infrastructure (UK) at Her Majesty's Treasury, UK and recently from Harvard Kennedy School Boston USA. Beatrice is also a qualified Finance professional with an MBA in Finance and Accounting, ACCA, with a degree in Economics.



**Carlos Salle**  
**Director**  
**Energy Policies and Climate Change - Iberdrola**  
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Industrial Engineer for the ETSII (School of Industrial Engineering) in the Universidad Politécnica de Madrid. He worked in areas related with system

operation in Red Eléctrica de España (the Spanish System Operator), and also was member of the management team in charge of launching and setting up the Market Operator Company, as Operations Manager. He worked at the energy regulator (CNE) in Spain as Director of Electricity and also in the consultancy firm NERA as Associate Manager for the Energy Area. In September 2001 he joined IBERDROLA Group as Regulation Director. Since December 2014 he is Director of Energy Policies and Climate Change in the Chairman's Area. Carlos is Chairman of the Energy Commission of the Official Spanish Chamber of Commerce. He was one of the founders, a decade ago, the Energy Without Borders Foundation, an NGO specialised in developing energy and water projects in non developed countries. He is also member of the UNECE (United Nations) Public-Private Partnerships (PPP) Business Advisory Board.

#### **David Baxter**



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Mr. Baxter is the Director of the Institute for Public Private Partnerships (IP3), a Tetra Tech Company based in Arlington Virginia. He was born in Cape Town, South Africa and has lived and worked across Africa. He is a fully trained educator and socio-economist and has worked at a number of educational/research institutions. He has more than 20 years of international experience in the areas of alternative financing of infrastructure projects (public-private partnerships), concession planning, socio-economic analysis, stakeholder involvement, and environmental compliance in the transportation and energy infrastructure sectors. As the Executive Director of IP3, he is focused on developing PPP capacity building programs for international clients (public and private sector) mostly who are focused on the energy, water, and transportation sectors.. He is an internationally recognized PPP thought leader. Currently he is an active collaborator with UNECE's International PPP Center of Excellence located in Geneva Switzerland. David is a member of two of UNECE's PPP committees where he serves as a technical advisor on water and renewable energy sector PPP best practices committees. David is also an advisor to the World Bank's BoK PPP Certification Program team. He is a recognized expert on emerging economies and has worked in over 20 countries.



**Daniel G Bauer**  
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Over 25 years + professional experience in corporate finance, international and domestic project finance in public-private partnerships and procurement operations as well as marketing and business development while at Macmillan, CBS, AT&T, and the Quantum Fund/Group, LLP. Some responsibilities included managing a US\$25 Billion Capital Structure; cash management, credit management, and banking relations with responsibility for over 300 direct personnel. Responsible for mergers and acquisitions; business development and alliances while at Quantum, formation of P3s

abroad in France, Eritrea, Canada, Honduras, Argentina, Malaysia, China, and Indonesia. A contributor to, and involved in, several entrepreneurial ventures within ICT and Green, Renewable Energy sectors.



**Dr Rajeev K Mehta**  
**PPP Expert**  
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Dr Rajeev K Mehta, presently working with African Development Bank (AfDB) on establishing PPP Regional Advisory Hub at East Africa Regional Resource Centre (EARC), Nairobi. Earlier, he has concluded his assignment as PPP Health Sector Advisor with National Treasury, Kenya as part of World Bank funded project. As Doctorate (Ph.D.) in Finance (Public Private Partnership) with Master Degree in Business Economics (Finance), Rajeev has 19 years of professional experience which included working with prominent International and National development agencies on key assignments of PPP institution & capacity building; PPP sectoral strategy; PPP policy, legal & regulatory framework; transaction advisory of PPP projects across various sectors of physical & social infrastructure; economic policies & reforms; private sector development; infrastructure advisory; project finance; industrial development; etc. Rajeev is also member of UNECE Project Teams developing international PPP standards for Renewable Energy and Health sector.

**Maria Yarmalchuk**  
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I hold an MBA in Finance, a Business Administration University Degree and 14 years of professional experience working in international companies in different sectors, with active large involvement in engineering industry since 2007 when I have joined AQUAPROJECT S.A., an engineering company with global activity and expertise in water management and environmental protection. Currently

Business Development Director and Board Member of the company, I am involved in the daily and strategic activity of the company and coordination of projects and a team of 130 specialized personnel in three locations (Romanian Headquarters and two international subsidiaries in Kurdistan and Moldova Republic).

I am very interested in the PPP field and its complex aspects, am happy to be part of the UNECE Team Groups, and I wish to have a meaningful contribution to this field and future projects worldwide.

**Mohamed El Haouari**  
**Director of Renewable Energy and Energy Efficiency in ADEREE, Morocco**  
**Location: Morocco**  
**Email: elhaouarimd@gmail.com**

Mohammed is an Industrial Process Engineer, has a certificate in Project Management and Marketing, and a Training Certificate in Energy Policies from the University of Athens. He was a Research Engineer in an Engineering Consulting Firm in 1995, and works currently at ADEREE as the Director of the Renewable Energy and Energy Efficiency Department. With 20 years of experience in RE and EE fields, he was also Director of Development and Planning in CDER (National Renewable Energy Development Center), Head of the Department of Quality and Technical Development, and in charge of the National Solar Laboratories Accreditation process with the Institute for Sustainable Power in the USA.

He is project manager of several projects funded by national and international organizations (USTDA- 5 MW Solar Power Plants-, PNUD/GEF –National Solar thermal Program and Energy Efficiency , European Union EU- National Code in Energy Efficiency in Buildings- ,German GIZ –Biomass Power Plants and Wind Farms -UE PCRD –UE Research programs in solar cooling, Hybrid Systems-Wind Energy, ADB National Energy Efficiency in Industry, etc). He is a Master Trainer in Solar and Thermal technologies and deeply involved in Moroccan national renewable energy and energy efficiency programs.



**Saniya Toleshova**  
**Managing Partner**  
**Unicase Law Firm**  
**Location: Kazakhstan**  
**Email: [saniya.p@colibrilaw.kz](mailto:saniya.p@colibrilaw.kz)**

Saniya specializes on broad range of legal issues with a particular emphasis on infrastructure, construction and public-private partnerships (PPP). She is an expert in project finance both in Kazakhstan and other CIS countries advising the Ministry of Transport and Communication on concession laws, preparation of tender documentation and concession agreements for major automobile roads. Saniya has participated in the working groups on development and amendment of Concession legislation in Kazakhstan. Saniya regularly represents interests of clients in various deals, concerning direct investment and joint ventures. She specializes on project funding, concessions and other forms of PPP in Kazakhstan. Saniya also consults clients on several construction projects in

Kazakhstan, representing interests both developers and real estate investors. And has a significant experience on consulting major companies on investments governance in construction section.

Since 2004 year Saniya worked in major international law companies in United Kingdom and Kazakhstan, and in the International Development Bank (2004-2005 - Coudert Brothers Law Firm; 2005 - 2008 Denton Wilde Sapte Law Firm; 2008-2009 Macleod Dixon Law Firm; 2009 – 2010 Eurasian Development Bank, 2010 - 2011 "Grata" Law Firm).



**Penny Herbst**  
**Non Executive Director Africa GreenCo and**  
**Accreditation Panel Member Green Climate Fund**  
**Location: South Africa**  
**Email: penny.herbst@africagreenco.com**

Penny Herbst has over 30 years of experience in an utility environment most of this in Eskom's Treasury department, where she was exposed to a diverse set of financial, commercial and legal structures that emanate from its operations. Amongst others she has managed Eskom's foreign and interest rate risk, money and capital market investments, project finance transactions, and the structuring of projects to mitigate risks associated with projects in Africa. She led the formation of Eskom's Development Finance unit where in the role of Development Financing Manager she was instrumental raising, in excess of \$6bn, from DFI and related institutions. This included funding for Eskom's first renewable projects where she spent some time in Eskom's Renewables Unit working on bridging the gap between financing and implementation.



**Raushana Chaltabayeva**  
**Partner**  
**Unicase Law Firm**  
**Location: Kazakhstan**  
**Email: raushana.c@unicaselaw.com**

Raushana has a professional experience in the field of financial regulations and green economy development. She advises state structures, financial institutions, investors and developers of projects in the energy sector developing the industry legislation, structuring transactions and their financing, preparation of all legal /normative acts related to the construction of energy facilities, supporting on the issues of protection of private investments, land use, construction, environmental protection and other issues arising out of the licensing procedures during the construction and operation of energy facilities.



**Vivek Mittal**  
**Managing Director**  
**Millennium Resource Strategies Limited**  
**Location: UK**  
**Email: vivek.mital@gmail.com**

Vivek has co-founded three renewable energy development companies focused on India, CEE, and USA. He has held executive Board level positions at these companies and currently serves as a Senior Expert to the Green Climate Fund, and the Independent Investment Committee member to the

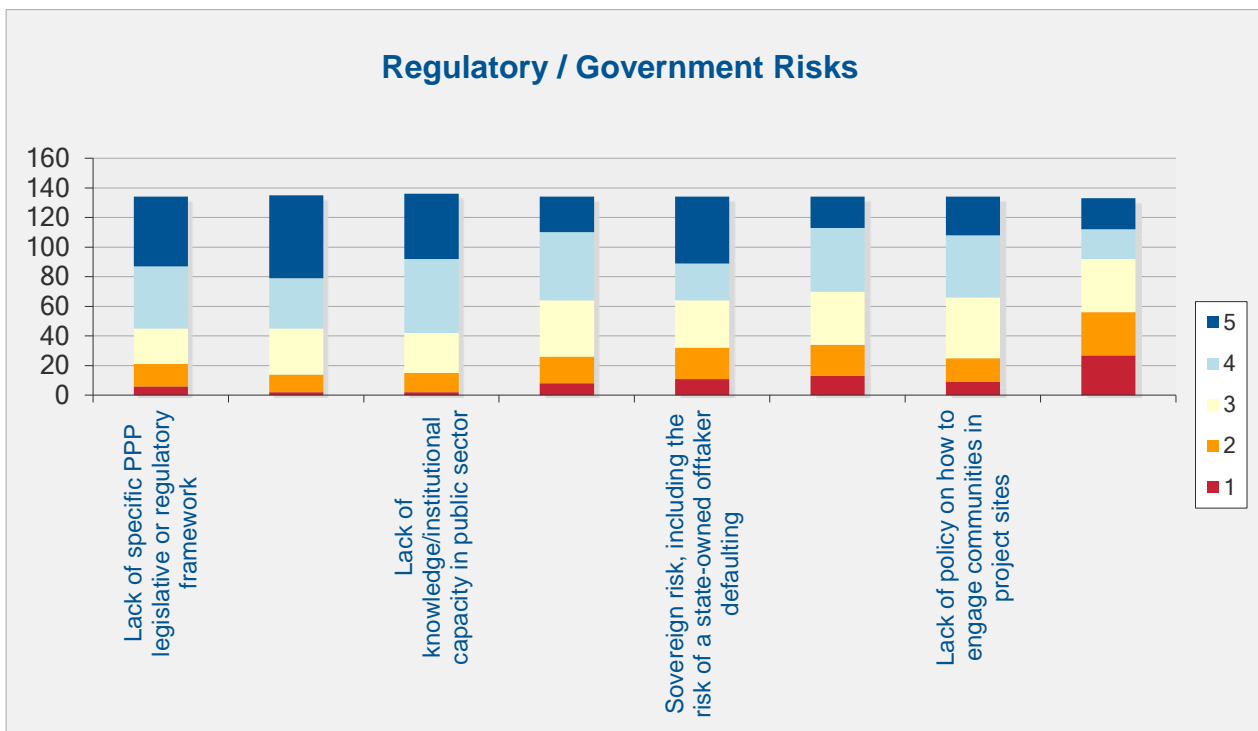
Clean Energy Transition Fund, Turkish – the first and only renewable energy private equity fund for Turkey. He has been adviser to multinational corporations on energy investment strategy and Governments on Energy Policy issues. Over the last twenty-three years Vivek has transacted in over thirty countries covering Europe, Africa, Central Asia, South and Pacific Asia and the Americas. He has a broad based experience with energy technologies covering both renewable energy and thermal power, including commercialization and scaling-up of new sectors such as the Offshore wind sector. In all, he has led the financing of more than 15,000 MW thermal power projects, and 2,000 MW of renewable energy projects, and deployed a wide range of innovative commercial and financial structures. Vivek has previously held senior positions in energy project finance at Bank of Scotland, Enron Europe Limited, Edison Capital Europe and ING Bank N.V..

## Annexes Survey Results

### Q.6 - Regulatory / Government Risks

On a scale of 1 to 5, which do you consider the major regulatory and governmental risks for RE PPP (1 = not at all important and 5 = essential)?

| Answer Options   | 1  | 2  | 3  | 4  | 5  |
|--|----|----|----|----|----|
| Lack of specific PPP legislative or regulatory framework   | 6  | 15 | 24 | 42 | 47 |
| Uncertain regulatory framework (changes in government approach) and retroactive policy change risk | 2  | 12 | 31 | 34 | 56 |
| Lack of knowledge/institutional capacity in public sector  | 2  | 13 | 27 | 50 | 44 |
| Time taken to appoint or lack of public sector professional advisors                               | 8  | 18 | 38 | 46 | 24 |
| Sovereign risk, including the risk of a state-owned off taker defaulting                           | 11 | 21 | 32 | 25 | 45 |
| Unclear allocation of power between national and local governments                                 | 13 | 21 | 36 | 43 | 21 |
| Lack of policy on how to engage communities in project sites                                       | 9  | 16 | 41 | 42 | 26 |
| Expropriation risk   | 27 | 29 | 36 | 20 | 21 |

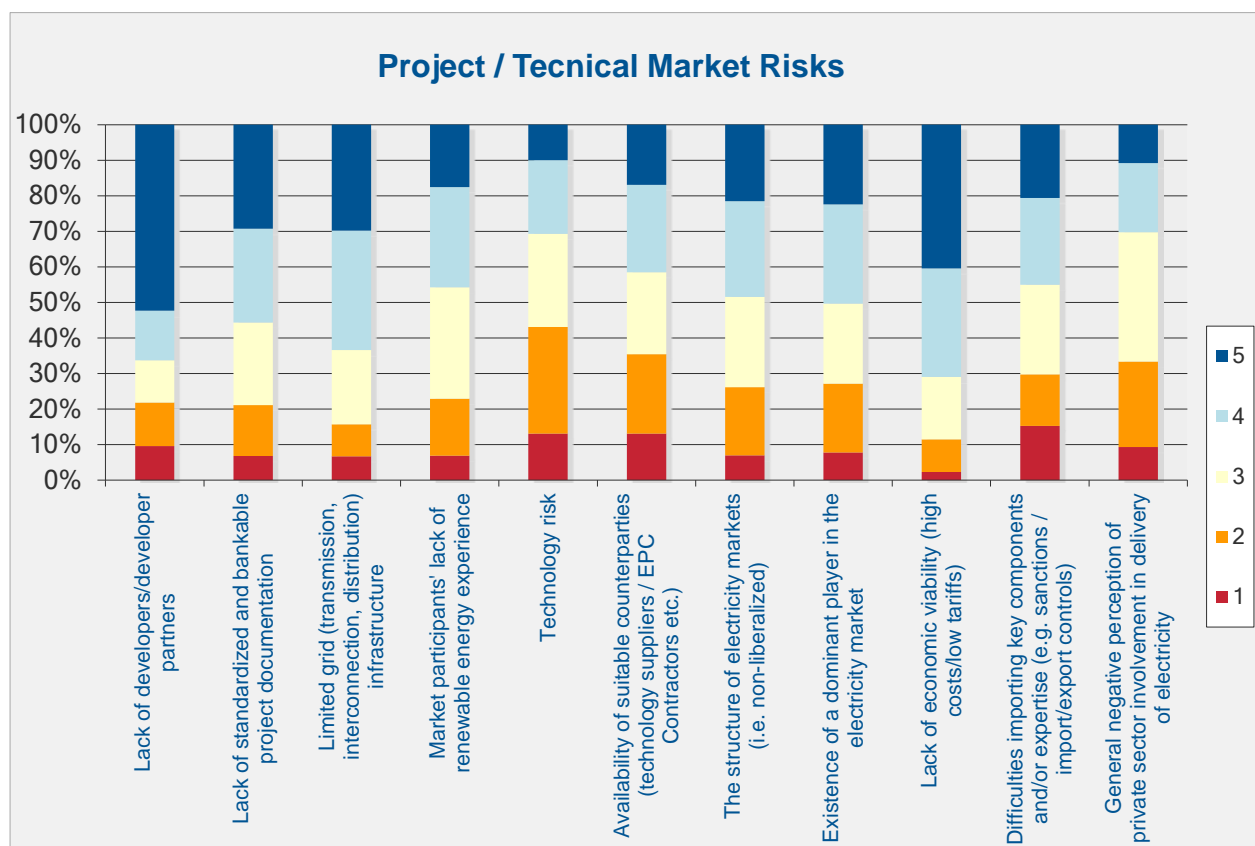




### Q.7 - Project / Technical / Market Risks

On a scale of 1 to 5, which do you consider the major project, technical and market risks for RE PPP (1 = not at all important and 5 = essential)?

| Answered Options   | 1  | 2  | 3  | 4  | 5   |
|--|----|----|----|----|-----|
| Lack of developers/developer partners  | 24 | 31 | 30 | 35 | 132 |
| Lack of standardized and bankable project documentation  | 9  | 19 | 31 | 35 | 39  |
| Limited grid (transmission, interconnection, distribution) infrastructure                        | 9  | 12 | 28 | 45 | 40  |
| Market participants' lack of renewable energy experience   | 9  | 21 | 41 | 37 | 23  |
| Technology risk  | 17 | 39 | 34 | 27 | 13  |
| Availability of suitable counterparties (technology suppliers / EPC Contractors etc.)            | 17 | 29 | 30 | 32 | 22  |
| The structure of electricity markets (i.e. non-liberalized)                                      | 9  | 25 | 33 | 35 | 28  |
| Existence of a dominant player in the electricity market   | 10 | 25 | 29 | 36 | 29  |
| Lack of economic viability (high costs/low tariffs)  | 3  | 12 | 23 | 40 | 53  |
| Difficulties importing key components and/or expertise (e.g. sanctions / import/export controls) | 20 | 19 | 33 | 32 | 27  |
| General negative perception of private sector involvement in delivery of electricity             | 12 | 31 | 47 | 25 | 14  |

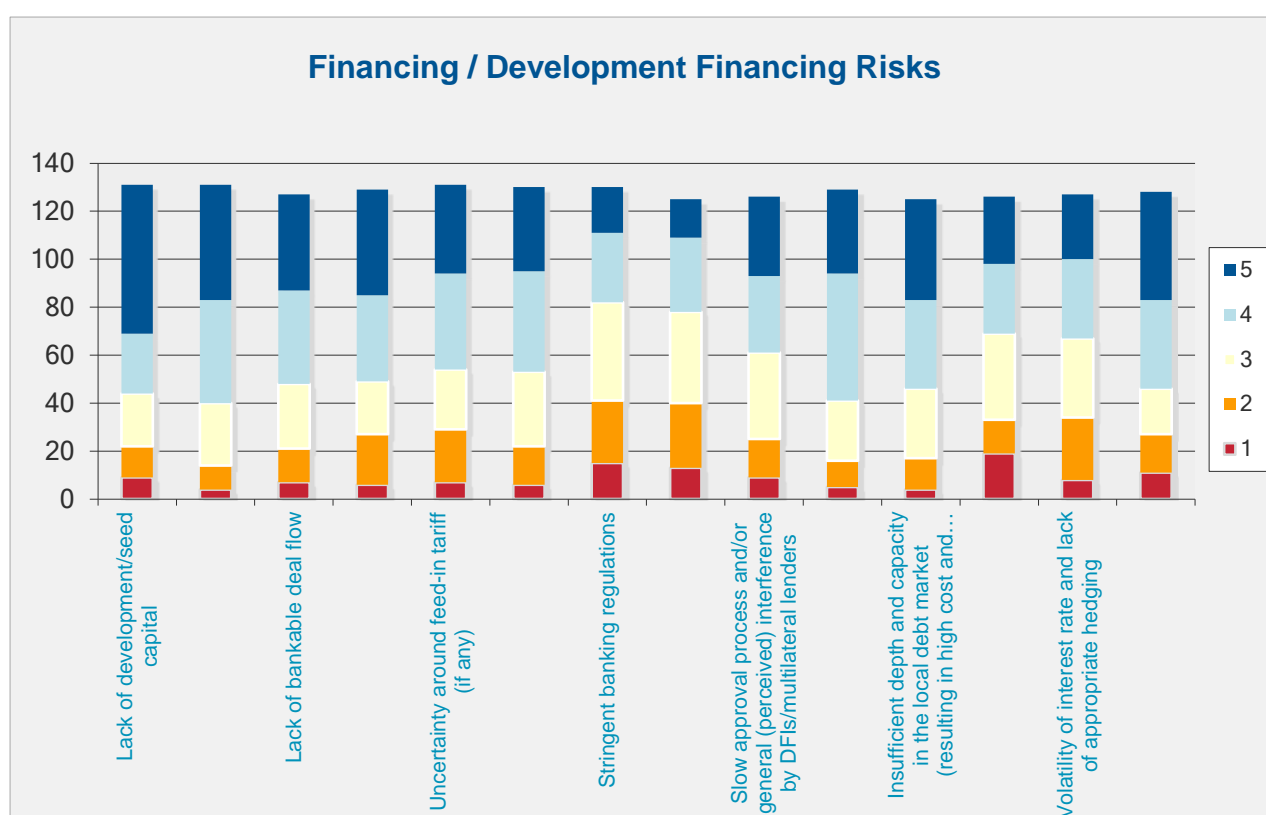


### Q.8 - Financing / Development Financing Risks



**On a scale of 1 to 5, which do you consider the major financing risks for RE PPP (1 = not at all important and 5 = essential)?**

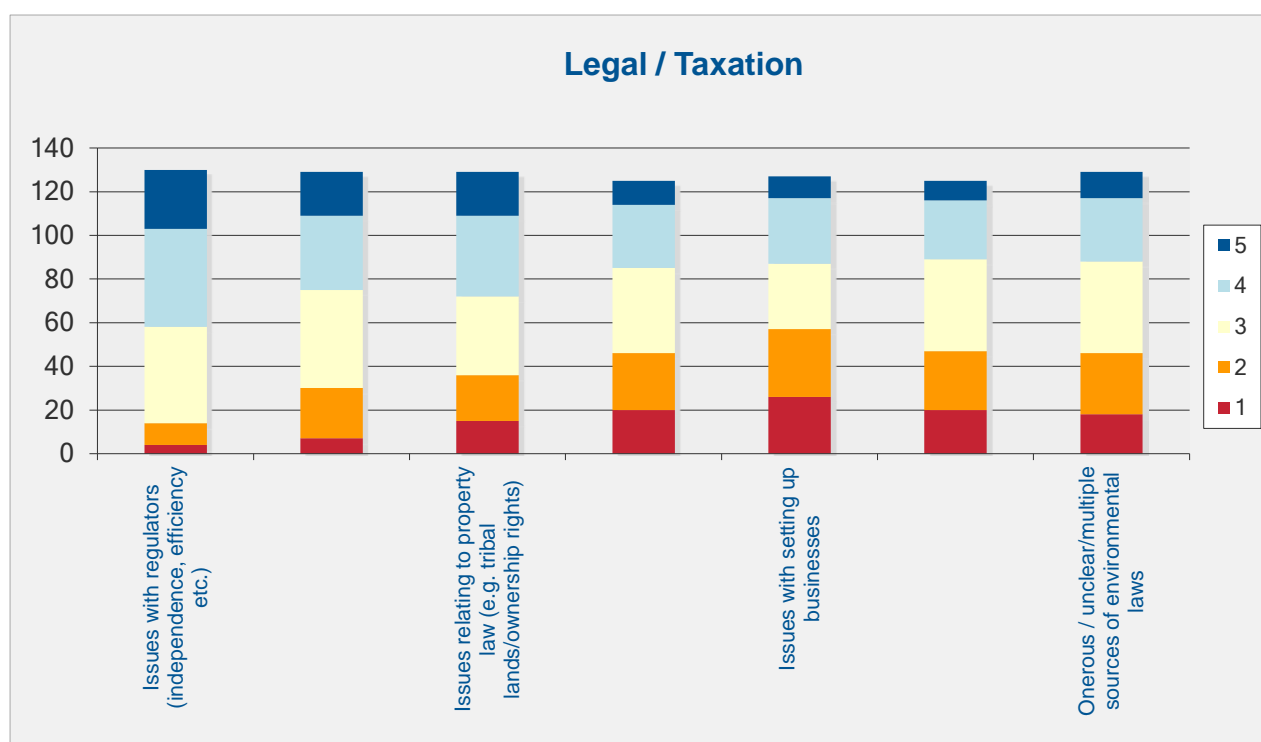
| Answered Options   | 1  | 2  | 3  | 4  | 5  |
|--|----|----|----|----|----|
| Lack of development/seed capital   | 9  | 13 | 22 | 25 | 62 |
| Tariffs not reflecting costs   | 4  | 10 | 26 | 43 | 48 |
| Lack of bankable deal flow   | 7  | 14 | 27 | 39 | 40 |
| PPA counterparty credit risk (uncreditworthy offtaker)   | 6  | 21 | 22 | 36 | 44 |
| Uncertainty around feed-in tariff (if any)   | 7  | 22 | 25 | 40 | 37 |
| Lack of / constraints of equity investors  | 6  | 16 | 31 | 42 | 35 |
| Stringent banking regulations  | 15 | 26 | 41 | 29 | 19 |
| Limited exit opportunities for investors   | 13 | 27 | 38 | 31 | 16 |
| Slow approval process and/or general (perceived) interference by DFIs/multilateral lenders           | 9  | 16 | 36 | 32 | 33 |
| Lack of commercial financing / unacceptable refinancing risks  | 5  | 11 | 25 | 53 | 35 |
| Insufficient depth and capacity in the local debt market (resulting in high cost and shorter tenors) | 4  | 13 | 29 | 37 | 42 |
| Issues with convertibility of foreign exchange / repatriation of profits                             | 19 | 14 | 36 | 29 | 28 |
| Volatility of interest rate and lack of appropriate hedging  | 8  | 26 | 33 | 33 | 27 |
| Currency risk / currency depreciation / inflation risk and lack of appropriate hedging               | 11 | 16 | 19 | 37 | 45 |



**Q.9 - Legal / Taxation**

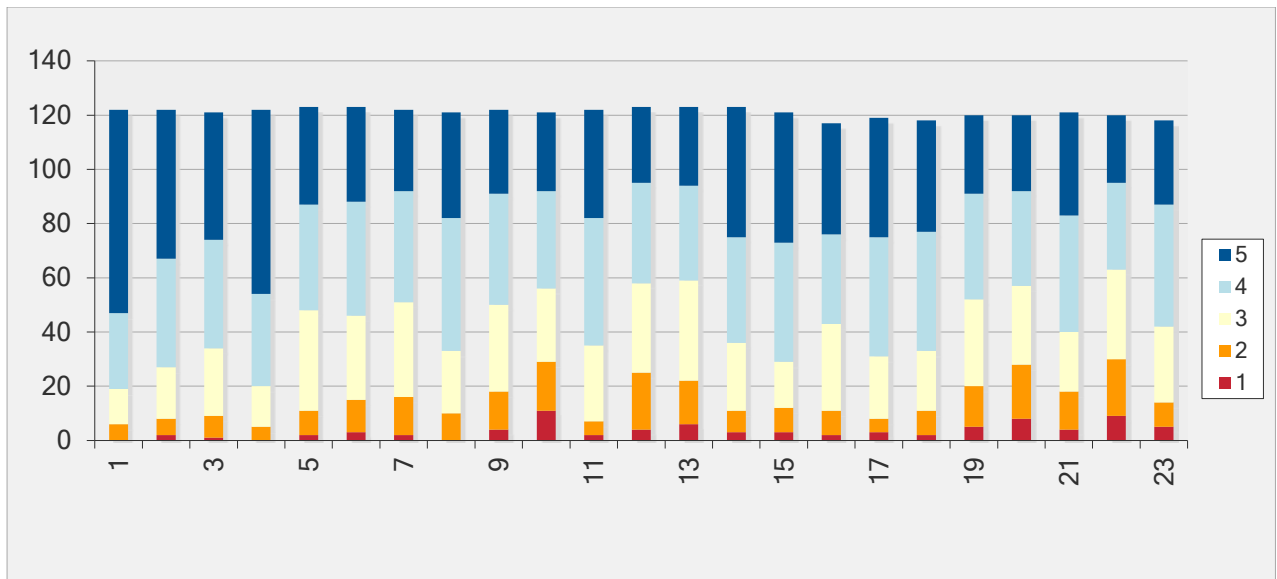
*On a scale of 1 to 5, which do you consider the major legal and taxation risks for RE PPP (1 = not at all important and 5 = essential)?*

| Answered Options   | 1  | 2  | 3  | 4  | 5  |
|--|----|----|----|----|----|
| Issues with regulators (independence, efficiency etc.)               | 4  | 10 | 44 | 45 | 27 |
| Uncertainty around tax status of project company / site / exemptions | 7  | 23 | 45 | 34 | 20 |
| Issues relating to property law (e.g. tribal lands/ownership rights) | 15 | 21 | 36 | 37 | 20 |
| Issues with recognition/enforcement of international arbitration     | 20 | 26 | 39 | 29 | 11 |
| Issues with setting up businesses                                    | 26 | 31 | 30 | 30 | 10 |
| Unclear/unsatisfactory security/insolvency laws                      | 20 | 27 | 42 | 27 | 9  |
| Onerous / unclear/multiple sources of environmental laws             | 18 | 28 | 42 | 29 | 12 |



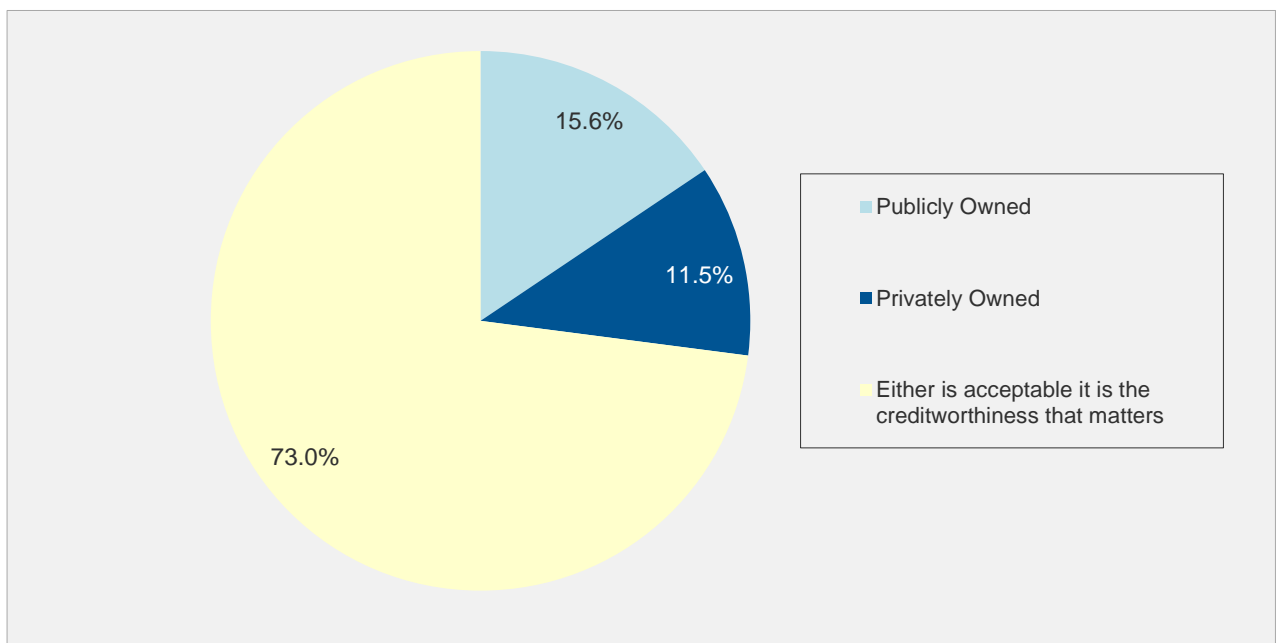
**Q.11 - On a scale of 1 to 5, how important do you think the following factors are in the successful implementation of a renewable energy PPP programme? (1 = not at all important and 5 = essential)**

| On a scale of 1 to 5, how important do you think the following factors are in the successful implementation of a renewable energy PPP programme? (1 = not at all important and 5 = essential) |  |    |    |    |    |    |       |
|---|--|----|----|----|----|----|-------|
| Answer Options  |  | 1  | 2  | 3  | 4  | 5  | Count |
| 1   | Strong political, public and institutional support for renewable energy PPPs   | 0  | 6  | 13 | 28 | 75 | 122   |
| 2   | Dedicated legal framework for renewable energy PPPs  | 2  | 6  | 19 | 40 | 55 | 122   |
| 3   | Publically available transparent PPP guidelines / manuals detailing PPP implementation process                         | 1  | 8  | 25 | 40 | 47 | 121   |
| 4   | Certainty of long term tariffs through PPA or feed in tariff regime  | 0  | 5  | 15 | 34 | 68 | 122   |
| 5   | Competitive tendering process / renewable energy auctions  | 2  | 9  | 37 | 39 | 36 | 123   |
| 6   | Government use of professional advisers  | 3  | 12 | 31 | 42 | 35 | 123   |
| 7   | Availability and consistent application of evaluation tools, such as Value for Money and cost-benefit analysis         | 2  | 14 | 35 | 41 | 30 | 122   |
| 8   | Clear integration of PPPs into energy policy including specified renewable energy quotas or targets                    | 0  | 10 | 23 | 49 | 39 | 121   |
| 9   | Dedicated PPP units in relevant public bodies  | 4  | 14 | 32 | 41 | 31 | 122   |
| 10  | Tender and contract documents availed in English language  | 11 | 18 | 27 | 36 | 29 | 121   |
| 11  | Objective selection criteria specified and consistently applied within stated timeframes                               | 2  | 5  | 28 | 47 | 40 | 122   |
| 12  | Broad public consultation prior to each project launch   | 4  | 21 | 33 | 37 | 28 | 123   |
| 13  | Adequate intellectual property protection for key project data / confidential treatment of commercial terms of tenders | 6  | 16 | 37 | 35 | 29 | 123   |
| 14  | Clear pre-tender information on government support package   | 3  | 8  | 25 | 39 | 48 | 123   |
| 15  | Standardized, bankable transaction documents   | 3  | 9  | 17 | 44 | 48 | 121   |
| 16  | Step-in rights / direct agreements for lenders   | 2  | 9  | 32 | 33 | 41 | 117   |
| 17  | Independent regulatory controls over energy tariffs  | 3  | 5  | 23 | 44 | 44 | 119   |
| 18  | Grid Code / transparent interconnection policy to ensure connectivity and protect against future export constraints    | 2  | 9  | 22 | 44 | 41 | 118   |
| 19  | Renewable energy mapping / zoning of country   | 5  | 15 | 32 | 39 | 29 | 120   |
| 20  | No (or limited) restrictions on foreign participation/shareholding   | 8  | 20 | 29 | 35 | 28 | 120   |
| 21  | Judiciary understands and accepts PPP policy framework   | 4  | 14 | 22 | 43 | 38 | 121   |
| 22  | Pre-identification of project sites by government  | 9  | 21 | 33 | 32 | 25 | 120   |
| 23  | Significant project pipeline   | 5  | 9  | 28 | 45 | 31 | 118   |
| answered question   |  |    |    |    |    |    | 87    |
| skipped questions   |  |    |    |    |    |    | 28    |



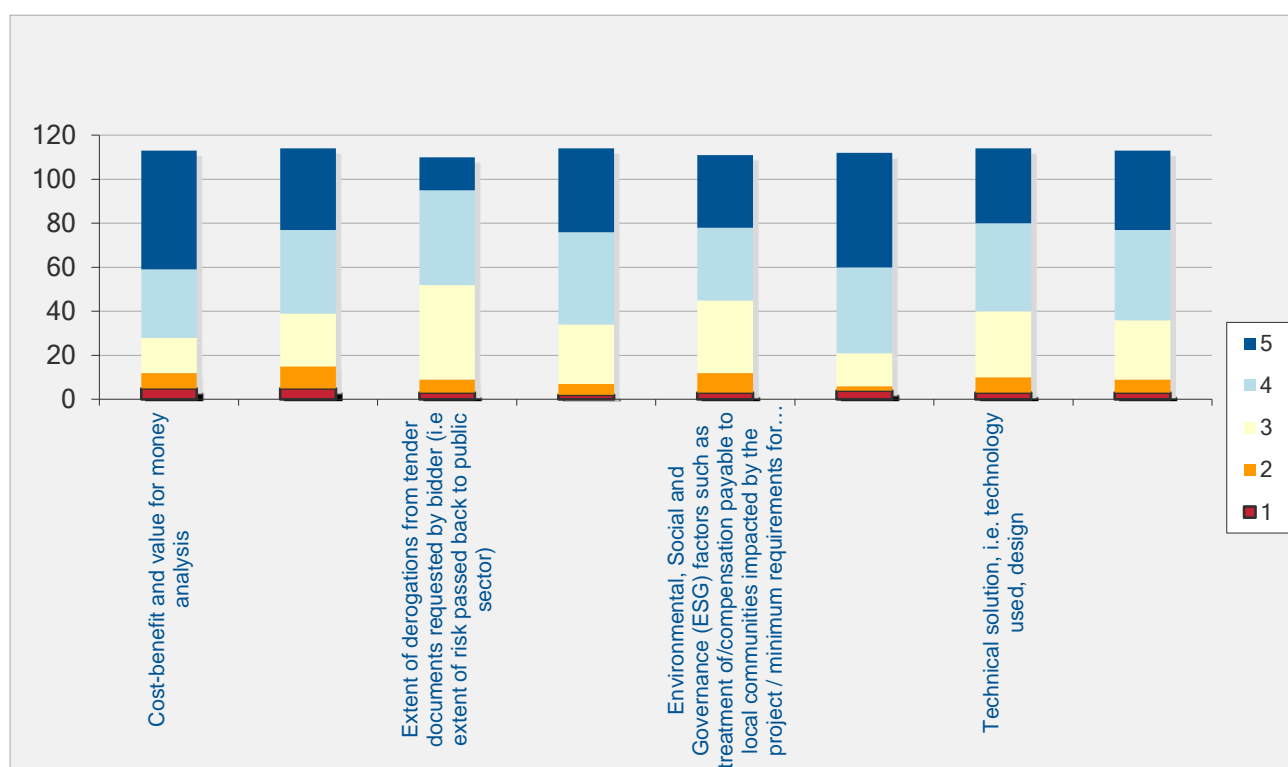
***Q. 12 - What is your preferred ownership structure of the offtaker?***

| Answer Options   | Response Percent | Response Count |
|--|------------------|----------------|
| Publicly Owned   | 15.6%            | 19             |
| Privately Owned  | 11.5%            | 14             |
| Either is acceptable it is the creditworthiness that matters | 73.0%            | 89             |
| Answered Question  |                  | 122            |
| Skipped Question   |                  | 42             |



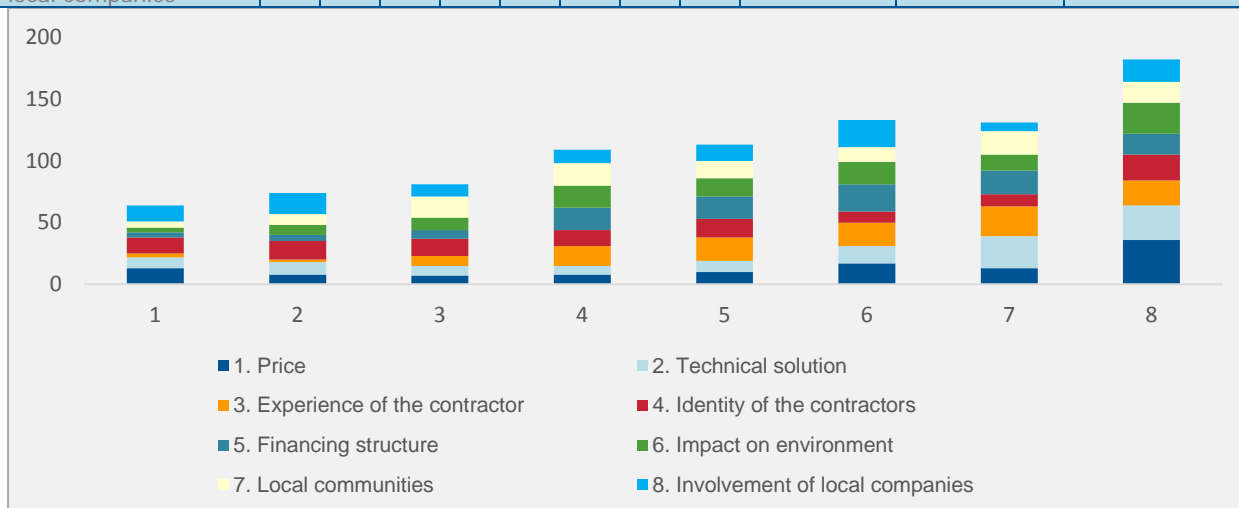
**Q. 14 - On a scale of 1 to 5, how much weight do you think the following factors be given when evaluating renewable energy PPP tenders to ensure transparency and fair competition? (1 = little or no weight / not applicable and 5 = a lot of weight)**

| Answer Options   | 1 | 2  | 3  | 4  | 5  | Response count | Answered question | Skipped question |
|--|---|----|----|----|----|----------------|-------------------|------------------|
| Cost-benefit and value for money analysis  | 5 | 7  | 16 | 31 | 54 | 113            | 136               | 28               |
| Internal Rate of Return/Net Present Value of equity returns  | 5 | 10 | 24 | 38 | 37 | 114            | 136               | 28               |
| Extent of derogations from tender documents requested by bidder (i.e extent of risk passed back to public sector)  | 3 | 6  | 43 | 43 | 15 | 110            | 136               | 28               |
| Financial capability of the bidder, including financing structure and proof of funding   | 2 | 5  | 27 | 42 | 38 | 114            | 136               | 28               |
| Environmental, Social and Governance (ESG) factors such as treatment of/compensation payable to local communities impacted by the project / minimum requirements for use of local companies/labour | 3 | 9  | 33 | 33 | 33 | 111            | 136               | 28               |
| Total project price / proposed tariff  | 4 | 2  | 15 | 39 | 52 | 112            | 136               | 28               |
| Technical solution, i.e. technology used, design   | 3 | 7  | 30 | 40 | 34 | 114            | 136               | 28               |
| Experience / track record of the sponsor / contractor(s)   | 3 | 6  | 27 | 41 | 36 | 113            | 136               | 28               |



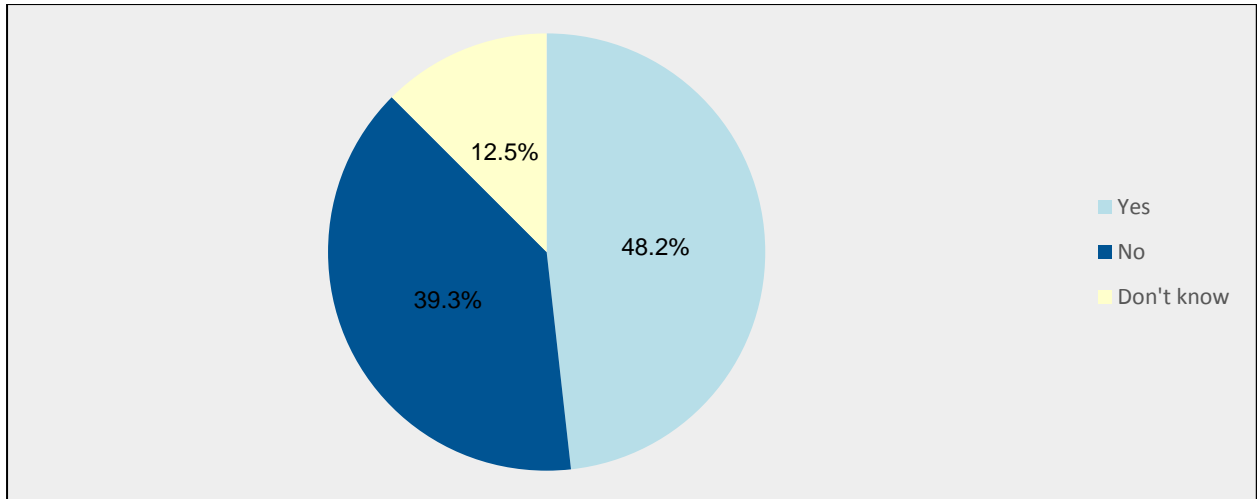
**Q. 15 - Please rank these evaluation criteria in the order of priority you believe they should have (1 = lowest priority, 8 = highest priority):**

| Answer Options                    | 1  | 2  | 3  | 4  | 5  | 6  | 7  | 8  | Response count | Answered question | Skipped question |
|-----------------------------------|----|----|----|----|----|----|----|----|----------------|-------------------|------------------|
| 1. Price                          | 13 | 8  | 7  | 8  | 10 | 17 | 13 | 36 | 84             | 136               | 28               |
| 2. Technical solution             | 9  | 10 | 8  | 7  | 9  | 14 | 26 | 28 | 84             | 136               | 28               |
| 3. Experience of the contractor   | 3  | 2  | 8  | 16 | 19 | 19 | 24 | 20 | 98             | 136               | 28               |
| 4. Identity of the contractors    | 13 | 15 | 14 | 13 | 15 | 9  | 10 | 21 | 68             | 136               | 28               |
| 5. Financing structure            | 4  | 5  | 7  | 18 | 18 | 22 | 19 | 17 | 94             | 136               | 28               |
| 6. Impact on environment          | 4  | 8  | 10 | 18 | 15 | 18 | 13 | 25 | 89             | 136               | 28               |
| 7. Local communities              | 5  | 9  | 17 | 18 | 14 | 12 | 19 | 17 | 80             | 136               | 28               |
| 8. Involvement of local companies | 13 | 17 | 10 | 11 | 13 | 22 | 7  | 18 | 71             | 136               | 28               |



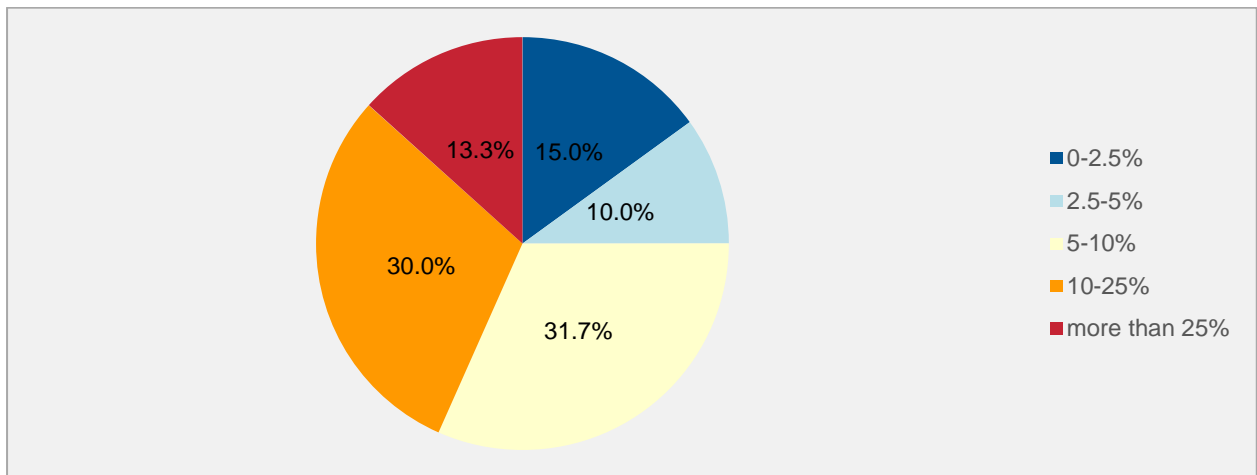
***Q. 16 - Should the government impose minimum requirements with respect to share ownership by local communities?***

| Answer Options    | Response Count | Response Percent |
|-------------------|----------------|------------------|
| Yes               | 54             | 48.2%            |
| No                | 44             | 39.3%            |
| Don't know        | 14             | 12.5%            |
| Answered Question | 112            | 100.0%           |



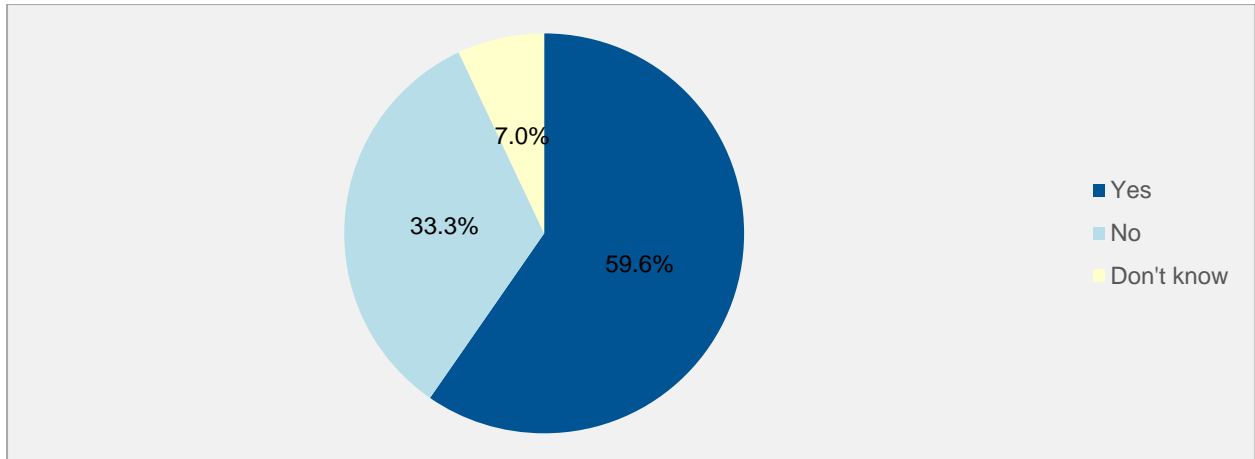
***Q. 17 - If yes, what % of the total equity:***

| Answer Options    | Response Percent | Response Count |
|-------------------|------------------|----------------|
| 0-2.5%            | 15.0%            | 9              |
| 2.5-5%            | 10.0%            | 6              |
| 5-10%             | 31.7%            | 19             |
| 10-25%            | 30.0%            | 18             |
| more than 25%     | 13.3%            | 8              |
| Answered Question |                  | 60             |
| Skipped Question  |                  | 104            |



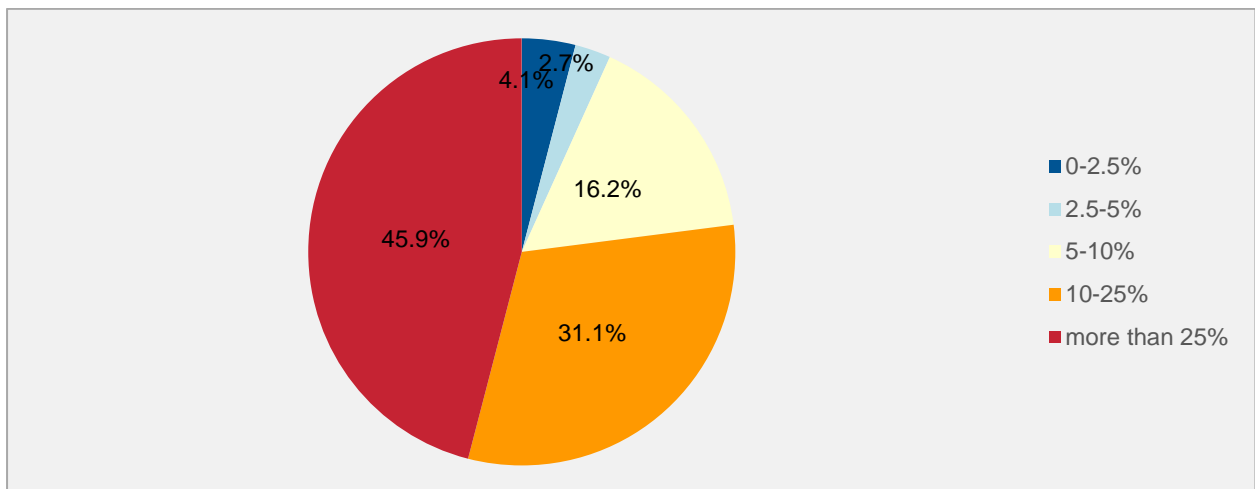
***Q.18 - Should the government impose minimum requirements with respect to the use of local labour?***

| Answer Options    | Response Count | Response Percent |
|-------------------|----------------|------------------|
| Yes               | 68             | 59.6%            |
| No                | 38             | 33.3%            |
| Don't know        | 8              | 7.0%             |
| Answered Question | 114            | 100.0%           |



***Q.19 If yes, what % of the total labour requirement:***

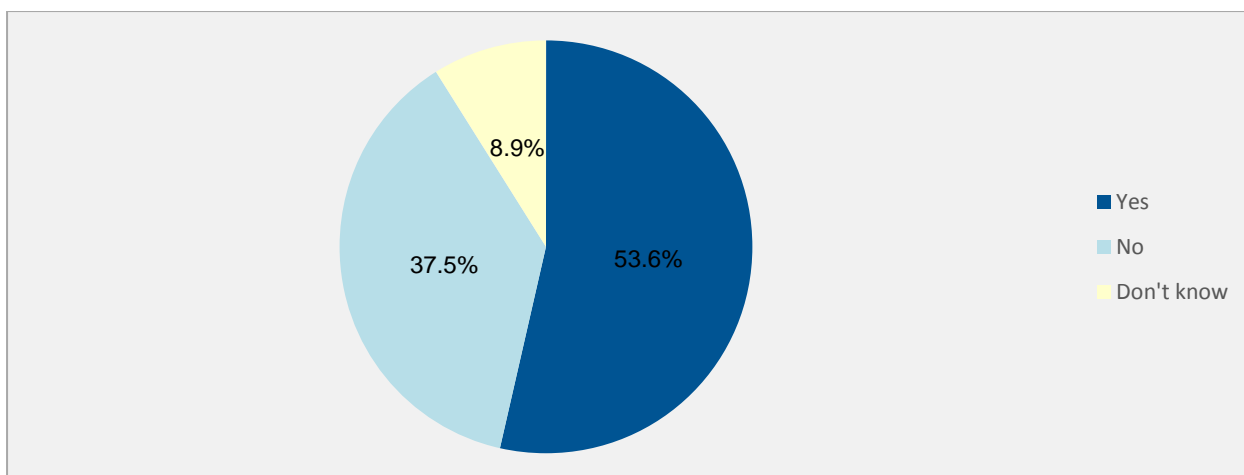
| Answer Options    | Response Percent | Response Count |
|-------------------|------------------|----------------|
| 0-2.5%            | 4.1%             | 3              |
| 2.5-5%            | 2.7%             | 2              |
| 5-10%             | 16.2%            | 12             |
| 10-25%            | 31.1%            | 23             |
| more than 25%     | 45.9%            | 34             |
| Answered Question |                  | 74             |
| Skipped Question  |                  | 72             |



***Q.20 - Should the government impose minimum requirements with respect to the use of local products and services?***

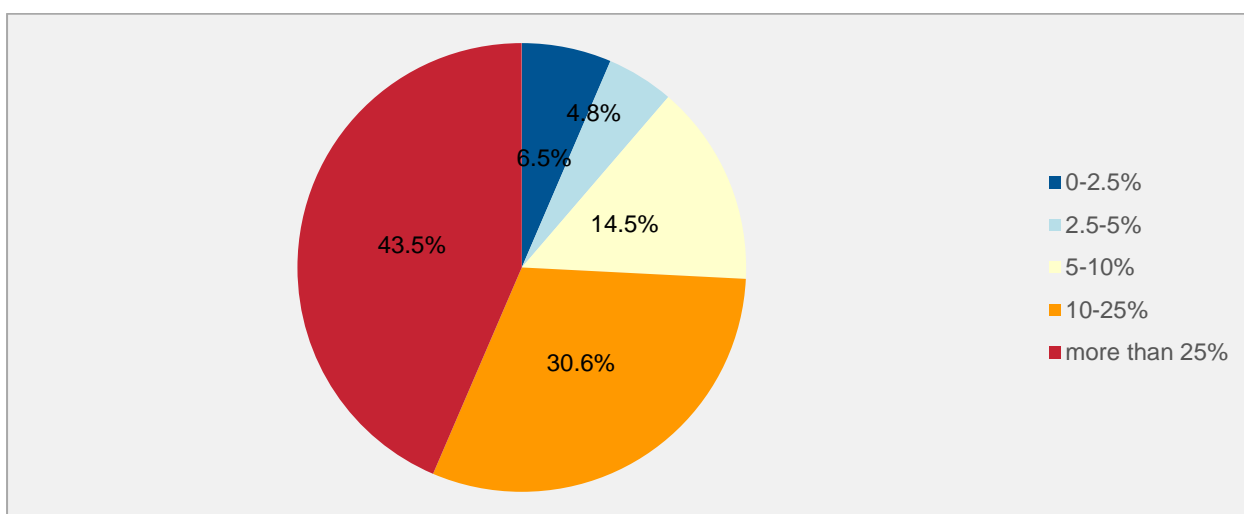
| Answer Options    | Response Count | Response Percent |
|-------------------|----------------|------------------|
| Yes               | 60             | 53.6%            |
| No                | 42             | 37.5%            |
| Don't know        | 10             | 8.9%             |
| Answered Question | 112            | 100.0%           |





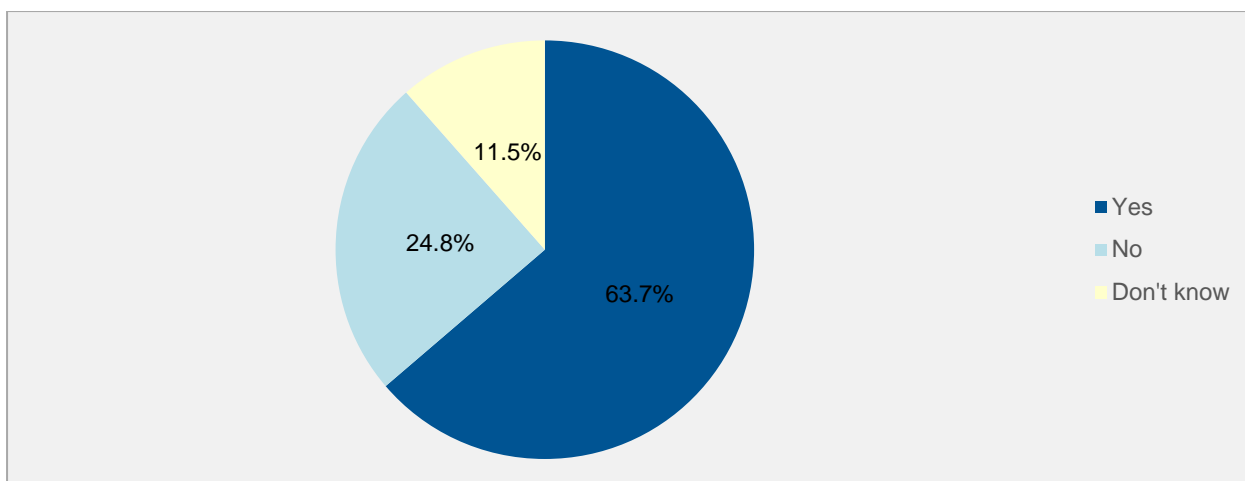
***Q.21 If yes, what % of the total project cost:***

| Answer Options    | Response Percent | Response Count |
|-------------------|------------------|----------------|
| 0-2.5%            | 6.5%             | 4              |
| 2.5-5%            | 4.8%             | 3              |
| 5-10%             | 14.5%            | 9              |
| 10-25%            | 30.6%            | 19             |
| more than 25%     | 43.5%            | 27             |
| Answered Question |                  | 62             |
| Skipped Question  |                  | 84             |



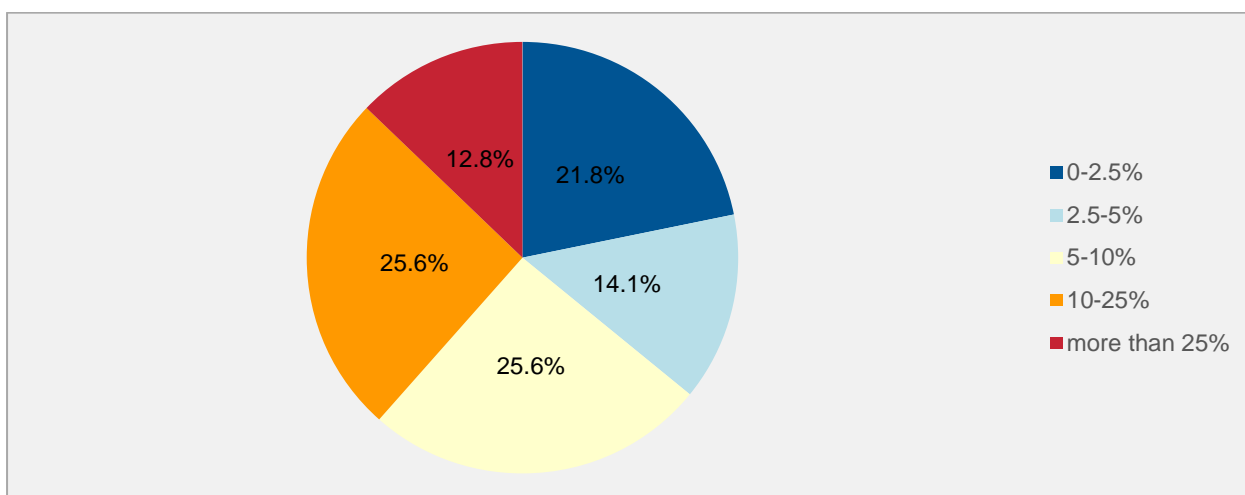
***Q.22 - Should the government impose minimum requirements with respect to investment in local socio-economic development?***

| Answer Options    | Response Count | Response Percent |
|-------------------|----------------|------------------|
| Yes               | 72             | 63.7%            |
| No                | 28             | 24.8%            |
| Don't know        | 13             | 11.5%            |
| Answered Question | 113            | 100.0%           |



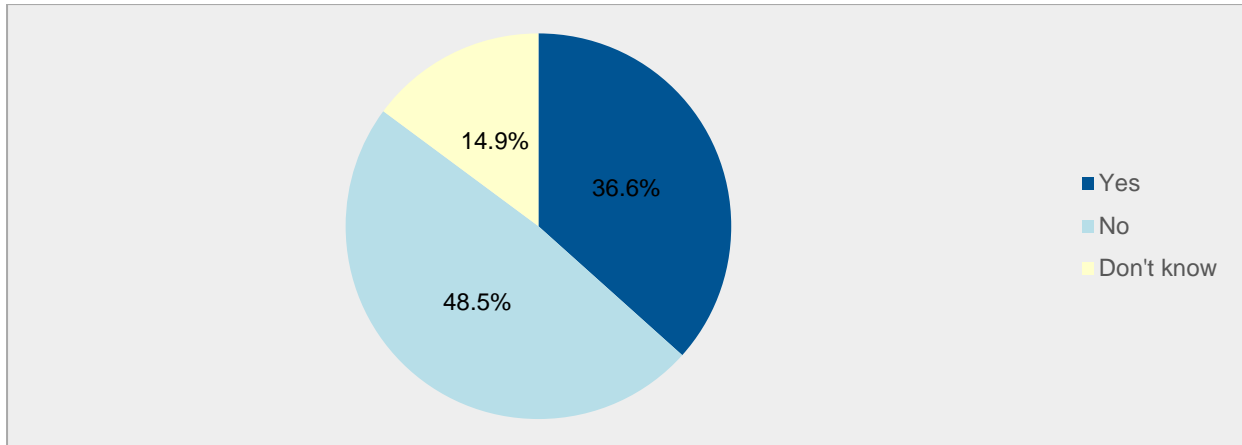
***Q.23 If yes, what % of profits:***

| Answer Options    | Response Percent | Response Count |
|-------------------|------------------|----------------|
| 0-2.5%            | 21.8%            | 17             |
| 2.5-5%            | 14.1%            | 11             |
| 5-10%             | 25.6%            | 20             |
| 10-25%            | 25.6%            | 20             |
| more than 25%     | 12.8%            | 10             |
| Answered Question |                  | 78             |
| Skipped Question  |                  | 68             |



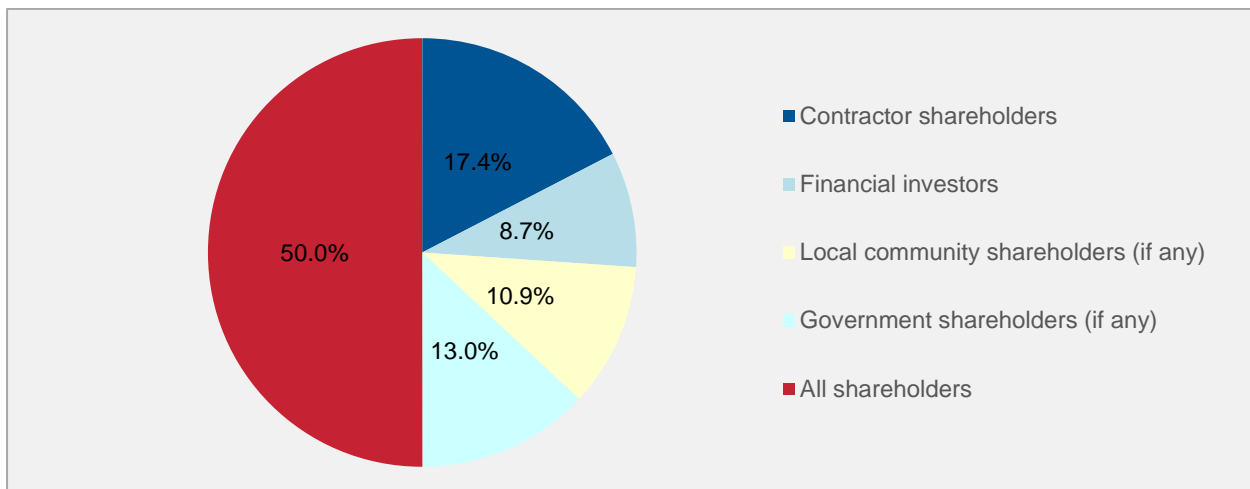
***Q.25 - Should there be any restrictions from government on the transfer of equity in the project company?***

| Answer Options    | Response Count | Response Percent |
|-------------------|----------------|------------------|
| Yes               | 37             | 36.6%            |
| No                | 49             | 48.5%            |
| Don't know        | 15             | 14.9%            |
| Answered Question | 101            | 100.0%           |



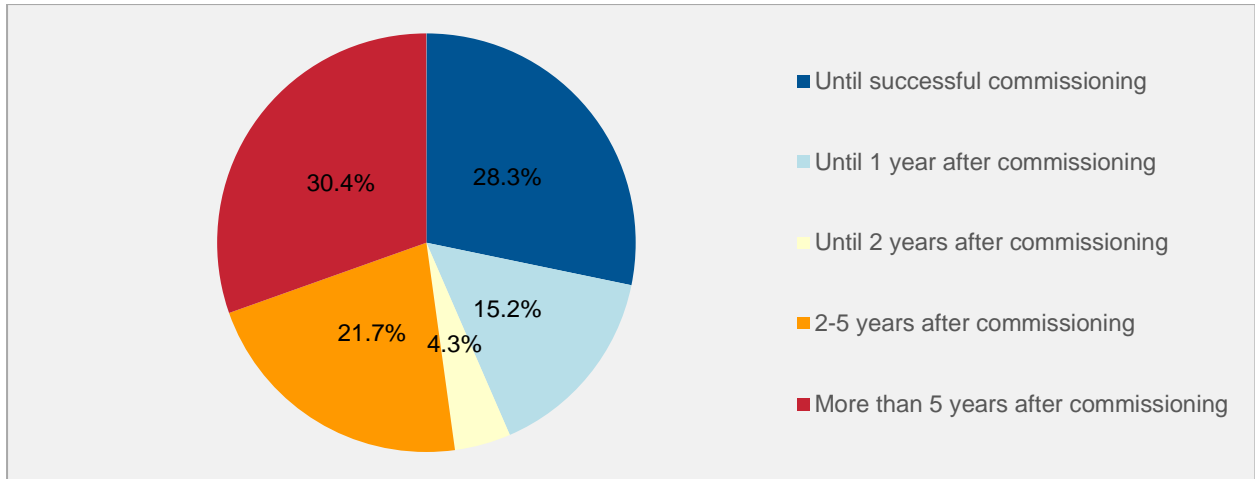
**Q.26 - If Yes: Which shareholders should transfer restrictions apply to:**

| Answer Options                        | Response Count | Response Percent |
|---------------------------------------|----------------|------------------|
| Contractor shareholders               | 8              | 15.4%            |
| Financial investors                   | 4              | 7.7%             |
| Local community shareholders (if any) | 5              | 9.6%             |
| Government shareholders (if any)      | 6              | 11.5%            |
| All shareholders                      | 23             | 44.2%            |
| Answered Question                     | 52             |                  |



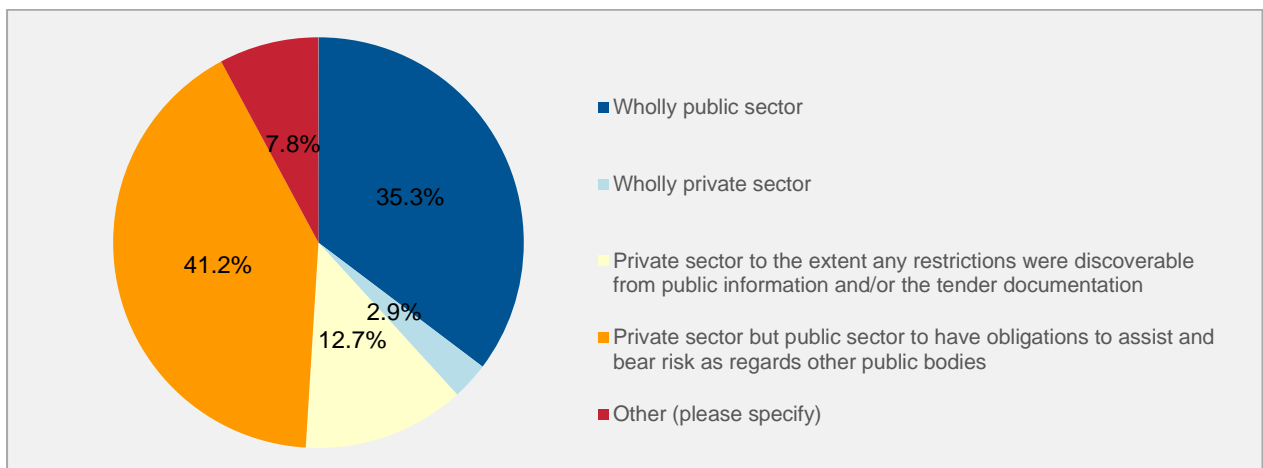
**Q.27 - If Yes: How long should transfer restrictions apply:**

| Answer Options                        | Response Count | Response Percent |
|---------------------------------------|----------------|------------------|
| Until successful commissioning        | 13             | 28.3%            |
| Until 1 year after commissioning      | 7              | 15.2%            |
| Until 2 years after commissioning     | 2              | 4.3%             |
| 2-5 years after commissioning         | 10             | 21.7%            |
| More than 5 years after commissioning | 14             | 30.4%            |
| Answered Question                     | 46             |                  |



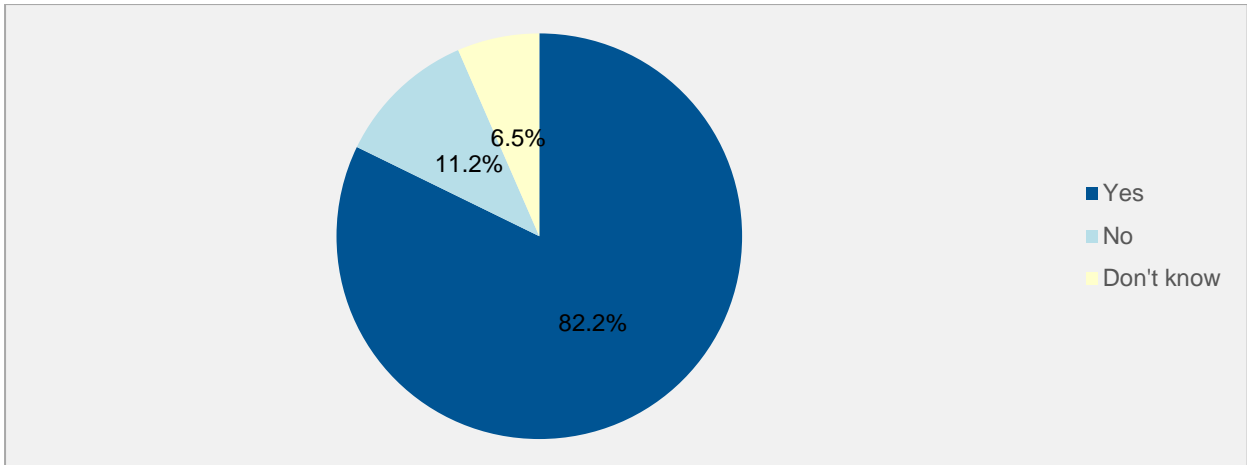
**Q. 28 - Who should bear the risk of obtaining all requisite land rights / planning consents?**

| Answer Options  | Response Count | Response Percent |
|---|----------------|------------------|
| Wholly public sector  | 36             | 35.3%            |
| Wholly private sector   | 3              | 2.9%             |
| Private sector to the extent any restrictions were discoverable from public information and/or the tender documentation | 13             | 12.7%            |
| Private sector but public sector to have obligations to assist and bear risk as regards other public bodies             | 42             | 41.2%            |
| Other (please specify)  | 8              | 7.8%             |
| Answered Question   | 102            |                  |



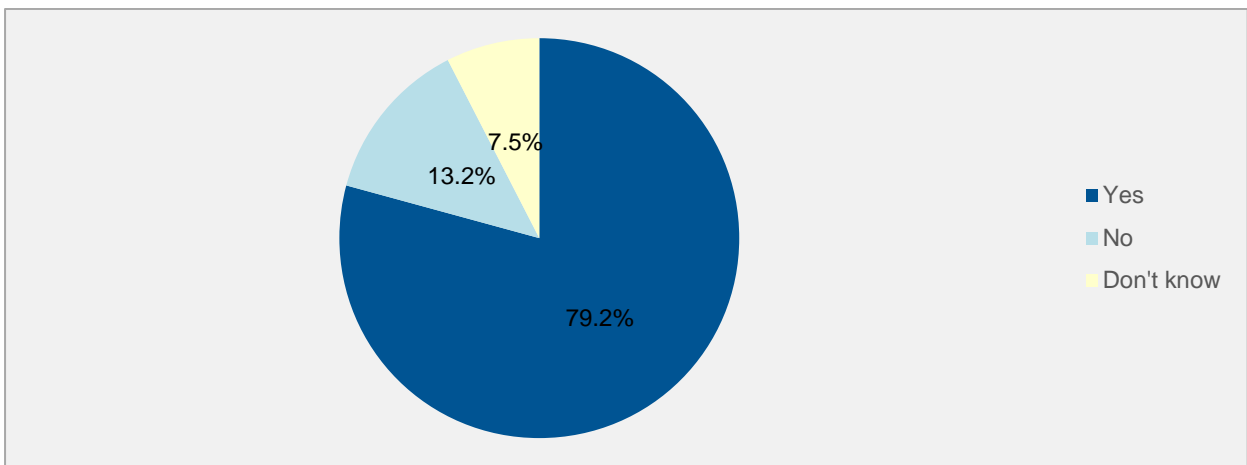
**Q.29 - Should the developer be entitled to schedule extensions and cost recovery for delays caused by permitting failures outside of its control?**

| Answer Options    | Response Count | Response Percent |
|-------------------|----------------|------------------|
| Yes               | 88             | 82.2%            |
| No                | 12             | 11.2%            |
| Don't know        | 7              | 6.5%             |
| Answered Question | 107            | 100.0%           |



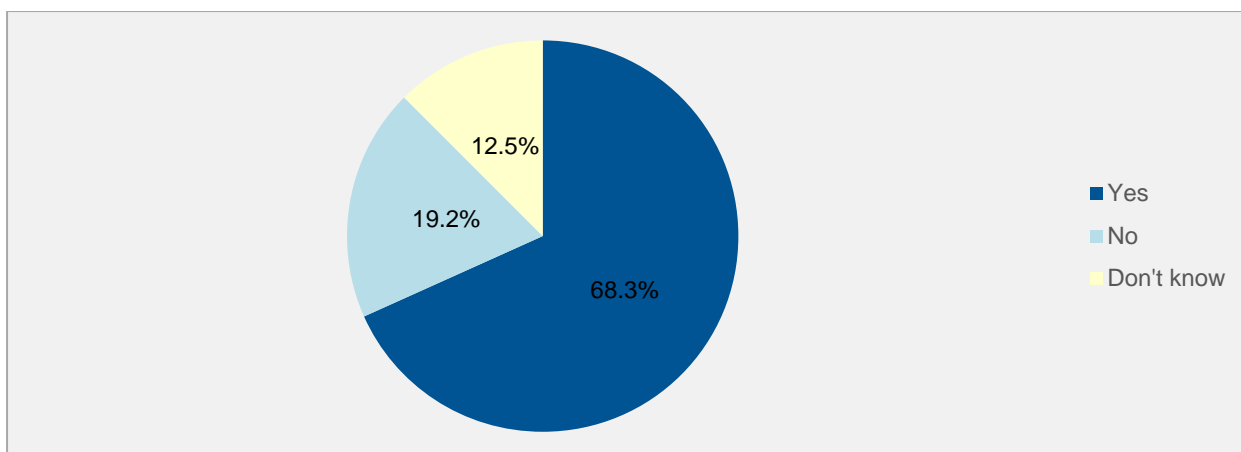
**Q.30 - Should the developer be entitled to resize the project as a result of permitting issues or as a result of grid related constraints i.e curtailment etc**

| Answer Options    | Response Count | Response Percent |
|-------------------|----------------|------------------|
| Yes               | 84             | 79.2%            |
| No                | 14             | 13.2%            |
| Don't know        | 8              | 7.5%             |
| Answered Question | 106            | 100.0%           |



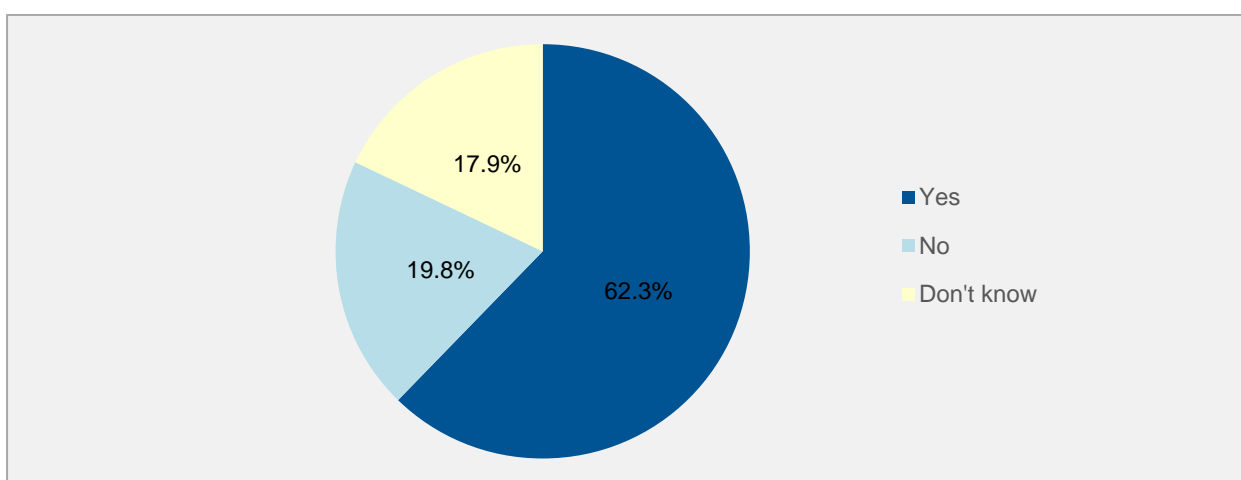
**Q.31 - Should the developer have the option to undertake any necessary transmission interconnection or substation works at the offtakerr's cost (whether paid upfront or through tariff)?**

| Answer Options    | Response Count | Response Percent |
|-------------------|----------------|------------------|
| Yes               | 71             | 68.3%            |
| No                | 20             | 19.2%            |
| Don't know        | 13             | 12.5%            |
| Answered Question | 104            | 100.0%           |



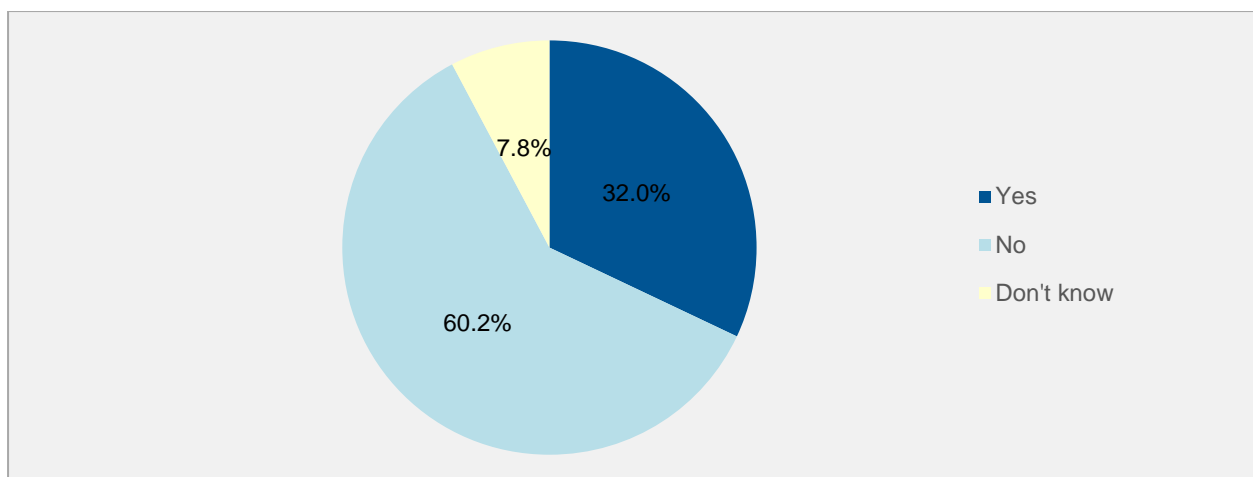
***Q.32 - Should the transaction documents provide mechanisms for the public sector to share in any refinancing gain?***

| Answer Options    | Response Count | Response Percent |
|-------------------|----------------|------------------|
| Yes               | 66             | 62.3%            |
| No                | 21             | 19.8%            |
| Don't know        | 19             | 17.9%            |
| Answered Question | 106            | 100.0%           |



***Q. 33 - Should the project company profits be capped?***

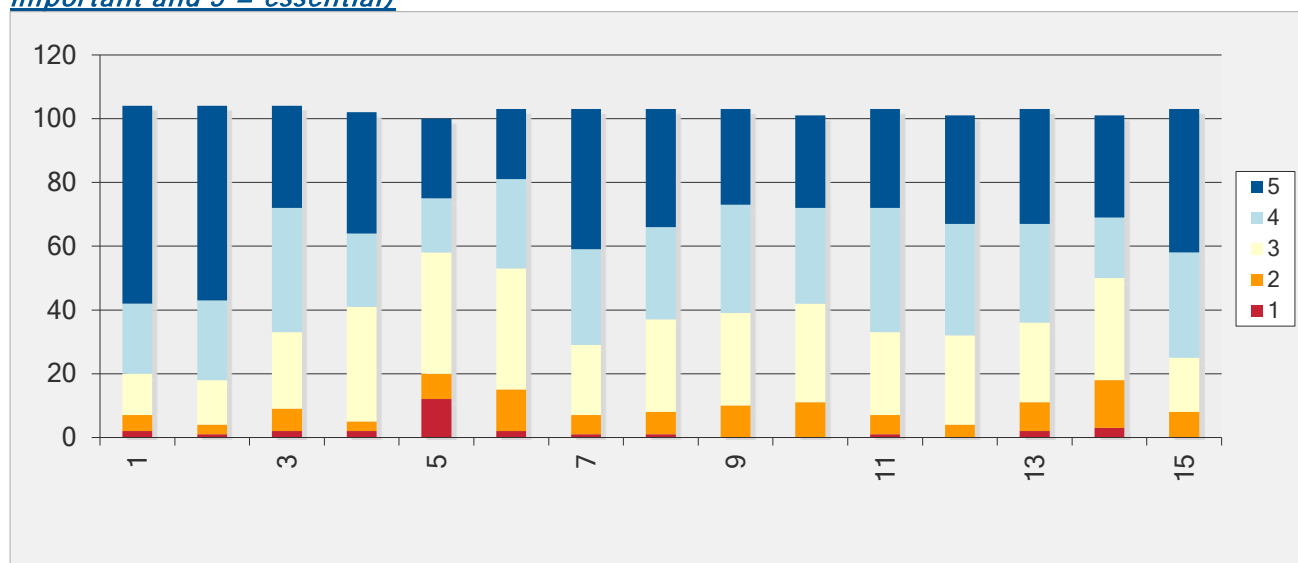
| Answer Options    | Response Count | Response Percent |
|-------------------|----------------|------------------|
| Yes               | 33             | 31.7%            |
| No                | 62             | 59.6%            |
| Don't know        | 8              | 7.7%             |
| Answered Question | 104            | 100.0%           |



**On a scale of 1 to 5, please rank, in your opinion, the importance of the following provisions for the bankability of a Power Purchasing Agreement (1 = not at all important and 5 = essential)**

| No                | Answer Options  | 1  | 2  | 3  | 4  | 5  | Response Count |
|-------------------|---|----|----|----|----|----|----------------|
| 1                 | Minimum term of PPA at least equal to loan tenor  | 2  | 5  | 13 | 22 | 62 | 104            |
| 2                 | Generation licence at least as long as the PPA tenor  | 1  | 3  | 14 | 25 | 61 | 104            |
| 3                 | Interconnection/transmission already in place or risk fully borne by offtaker                 | 2  | 7  | 24 | 39 | 32 | 104            |
| 4                 | Take or pay arrangements  | 2  | 3  | 36 | 23 | 38 | 102            |
| 5                 | Tariff in USD or similar hard currency  | 12 | 8  | 38 | 17 | 25 | 100            |
| 6                 | Deemed energy payment for economic curtailment / grid failure or unavailability               | 2  | 13 | 38 | 28 | 22 | 103            |
| 7                 | Protection from Change in Law   | 1  | 6  | 22 | 30 | 44 | 103            |
| 8                 | Protection from Change in Tax   | 1  | 7  | 29 | 29 | 37 | 103            |
| 9                 | Pre-agreed liquidated damages for delay   | 0  | 10 | 29 | 34 | 30 | 103            |
| 10                | Cap on liquidated damages   | 0  | 11 | 31 | 30 | 29 | 101            |
| 11                | Termination right for prolonged Force Majeure   | 1  | 6  | 26 | 39 | 31 | 103            |
| 12                | Comprehensive Force Majeure Clause (including political unrest)                               | 0  | 4  | 28 | 35 | 34 | 101            |
| 13                | Termination compensation for offtaker default / prolonged force majeure                       | 2  | 9  | 25 | 31 | 36 | 103            |
| 14                | Independent engineer (acceptable to financing parties) certification of construction payments | 3  | 15 | 32 | 19 | 32 | 101            |
| 15                | Dispute-resolution mechanism including international arbitration                              | 0  | 8  | 17 | 33 | 45 | 103            |
| answered question |   |    |    |    |    |    | 104            |
| skipped questions |   |    |    |    |    |    | 60             |

**Q.34 - On a scale of 1 to 5, please rank, in your opinion, the importance of the following provisions for the bankability of a Power Purchasing Agreement (1 = not at all important and 5 = essential)**

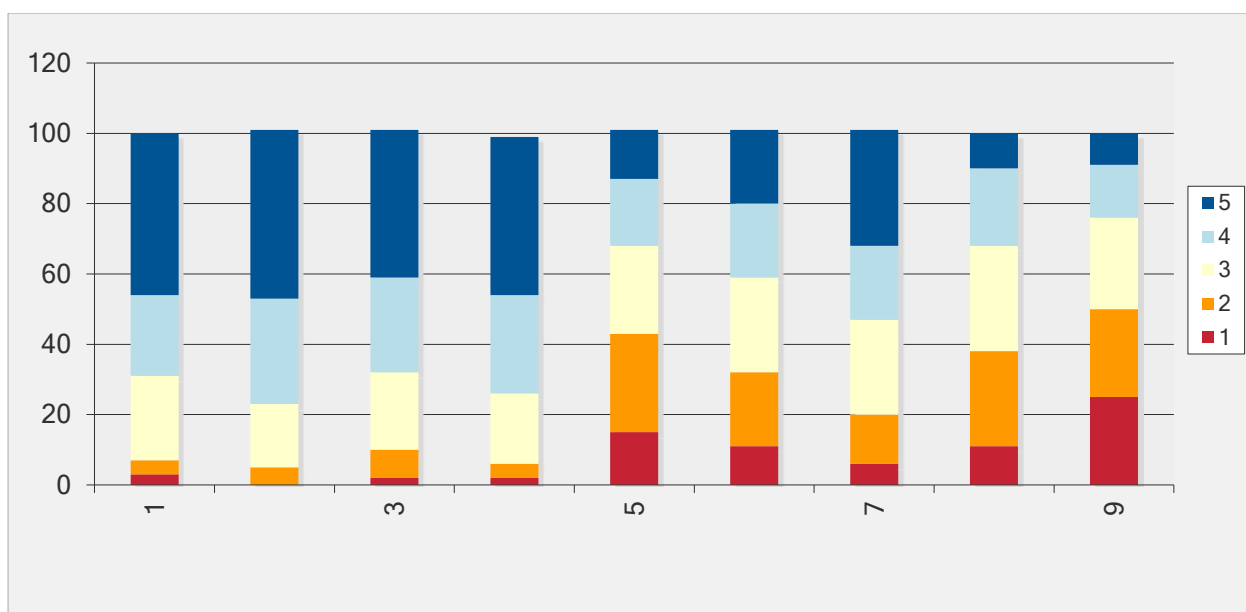


**Q.36 - On a scale of 1 to 5, please rank the following government support mechanisms in terms of how important you believe they are in facilitating private sector investment in renewable energy PPPs (1 = not at all important and 5 = essential)**

On a scale of 1 to 5, please rank the following government support mechanisms in terms of how important you believe they are in facilitating private sector investment in renewable energy PPPs (1 = not at all important and 5 = essential)

| No                | Answer Options  | 1  | 2  | 3  | 4  | 5  | Response Count |
|-------------------|---|----|----|----|----|----|----------------|
| 1                 | Government guarantee for PPA payments by the offtaker   | 3  | 4  | 24 | 23 | 46 | 100            |
| 2                 | Government guarantee of change in law / tax clause  | 0  | 5  | 18 | 30 | 48 | 101            |
| 3                 | Government guarantee of compensation for political events / government default                                | 2  | 8  | 22 | 27 | 42 | 101            |
| 4                 | Government assistance/cooperation with all entitlements consents and authorizations necessary for the project | 2  | 4  | 20 | 28 | 45 | 99             |
| 5                 | Government pays (part of) project development costs   | 15 | 28 | 25 | 19 | 14 | 101            |
| 6                 | Subsidies, quotas applicable and soft loans available from the Government                                     | 11 | 21 | 27 | 21 | 21 | 101            |
| 7                 | Provision by Government of land for the project   | 6  | 14 | 27 | 21 | 33 | 101            |
| 8                 | Provision by Government of feasibility studies  | 11 | 27 | 30 | 22 | 10 | 100            |
| 9                 | Government assumes (part of) technology risk  | 25 | 25 | 26 | 15 | 9  | 100            |
| answered question |   |    |    |    |    |    | 101            |
| skipped questions |   |    |    |    |    |    | 63             |

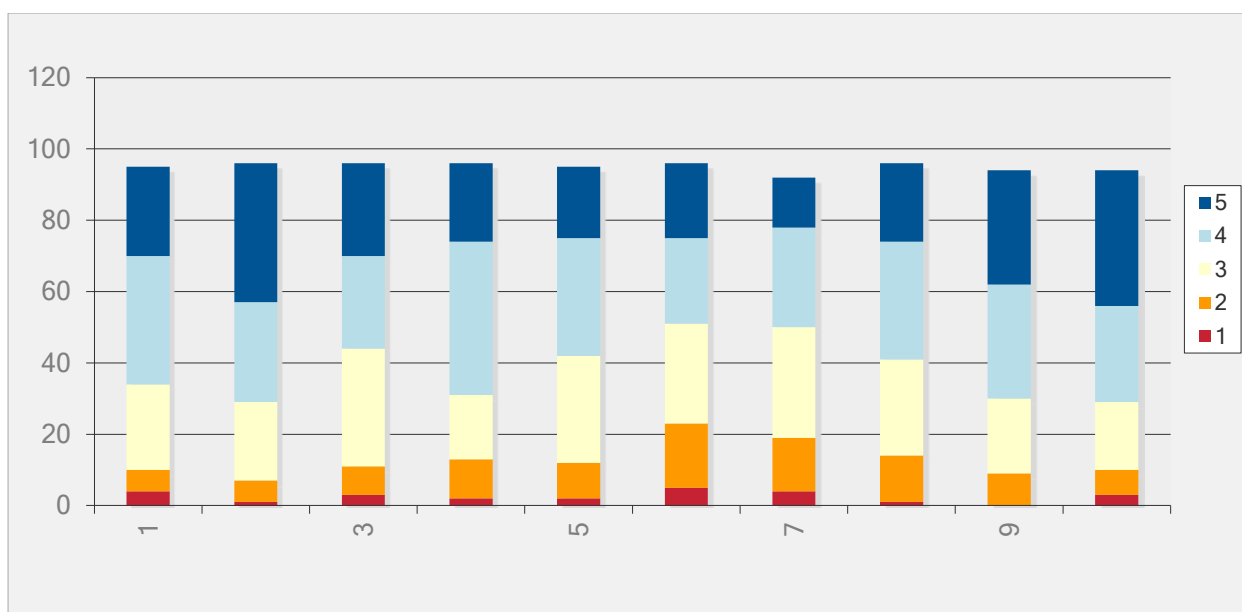




*Q.38 - How important do you consider the following risk mitigating tools and/or emerging financing mechanisms are, on a scale of 1 to 5, in facilitating private sector investment in renewable energy PPPs (1 = not at all important and 5 = essential)*

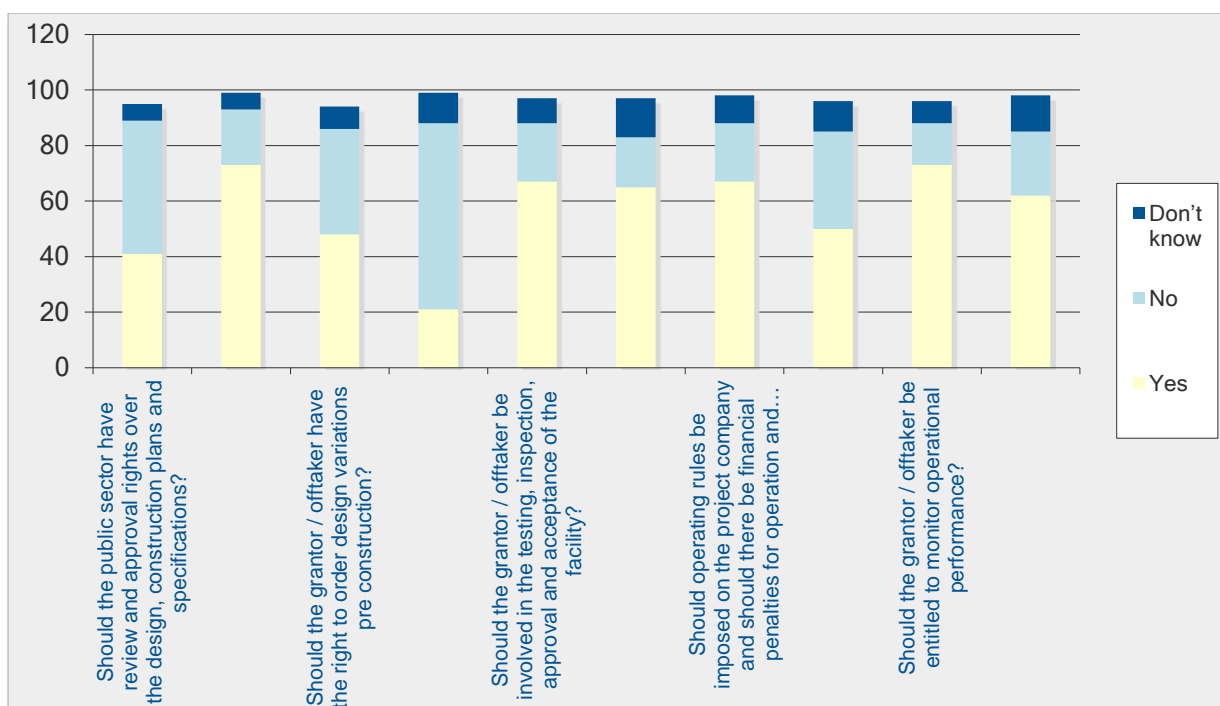
How important do you consider the following risk mitigating tools and/or emerging financing mechanisms are, on a scale of 1 to 5, in facilitating private sector investment in renewable energy PPPs (1 = not at all important and 5 = essential)

| No                | Answer Options  | 1 | 2  | 3  | 4  | 5  | Response Count |
|-------------------|---|---|----|----|----|----|----------------|
| 1                 | Partial risk guarantees                                       | 4 | 6  | 24 | 36 | 25 | 95             |
| 2                 | Political risk guarantees/insurance                           | 1 | 6  | 22 | 28 | 39 | 96             |
| 3                 | Project development facilities                                | 3 | 8  | 33 | 26 | 26 | 96             |
| 4                 | Full/Partial credit guarantees                                | 2 | 11 | 18 | 43 | 22 | 96             |
| 5                 | Credit-linked guarantees                                      | 2 | 10 | 30 | 33 | 20 | 95             |
| 6                 | Trade finance guarantees                                      | 5 | 18 | 28 | 24 | 21 | 96             |
| 7                 | Mezzanine debt providers (to improve terms of senior debt)    | 4 | 15 | 31 | 28 | 14 | 92             |
| 8                 | Risk sharing facilities                                       | 1 | 13 | 27 | 33 | 22 | 96             |
| 9                 | Liquidity facilities to bridge gap to receipt of PPA payments | 0 | 9  | 21 | 32 | 32 | 94             |
| 10                | Hedging instruments for currency and inflation risk           | 3 | 7  | 19 | 27 | 38 | 94             |
| answered question |   |   |    |    |    |    | 96             |
| skipper questions |   |   |    |    |    |    | 68             |



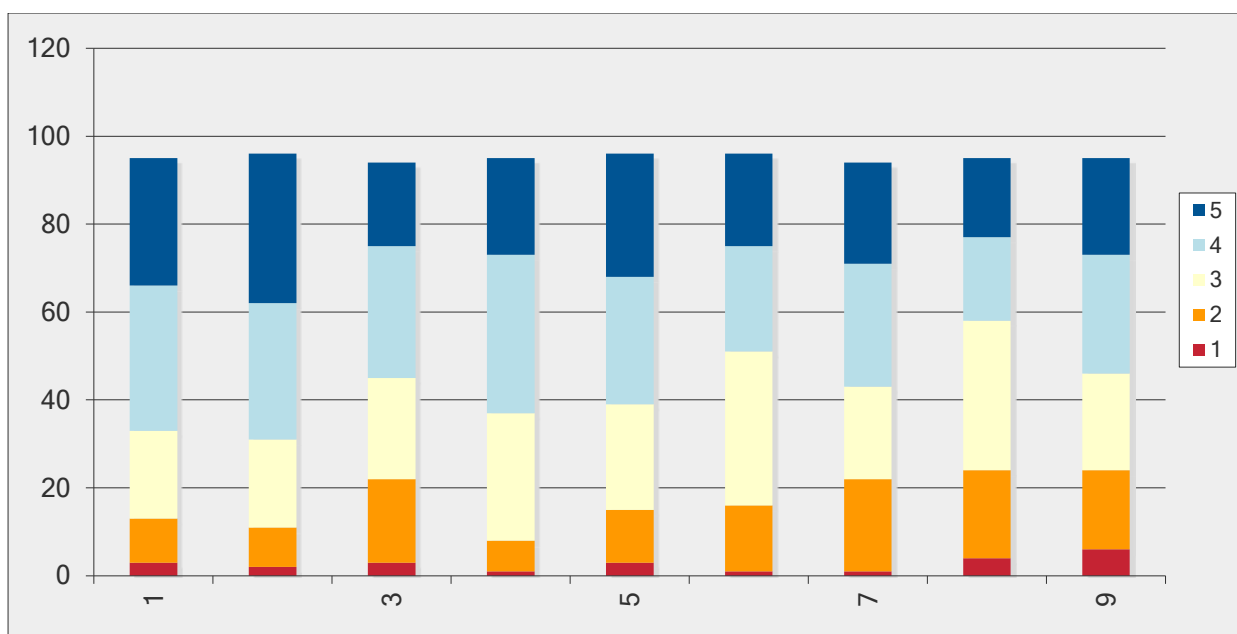
**Q.40 - You will now be asked a number of questions relating to the construction and operation of renewable energy PPP projects.**

| Answer Options   | Yes | No | Don't know | Response Count |
|--|-----|----|------------|----------------|
| Should the public sector have review and approval rights over the design, construction plans and specifications?                         | 41  | 48 | 6          | 99             |
| Should the grantor / offtaker have the right to monitor construction?  | 73  | 20 | 6          | 99             |
| Should the grantor / offtaker have the right to order design variations pre construction?  | 48  | 38 | 8          | 94             |
| Should the grantor / offtaker have the right to order design variations post construction?   | 21  | 67 | 11         | 99             |
| Should the grantor / offtaker be involved in the testing, inspection, approval and acceptance of the facility?                           | 67  | 21 | 9          | 97             |
| Should the project company be obliged to achieve continuous service provision?   | 65  | 18 | 14         | 97             |
| Should operating rules be imposed on the project company and should there be financial penalties for operation and maintenance failures? | 67  | 21 | 10         | 98             |
| Should the project company be obliged to deliver financial information and reports (in addition to publicly filed accounts)?             | 50  | 35 | 11         | 96             |
| Should the grantor / offtaker be entitled to monitor operational performance?  | 73  | 15 | 8          | 96             |
| Should the public sector have emergency step-in powers?  | 62  | 23 | 13         | 98             |
| answered question  | 99  |    |            |                |
| skipper questions  | 65  |    |            |                |



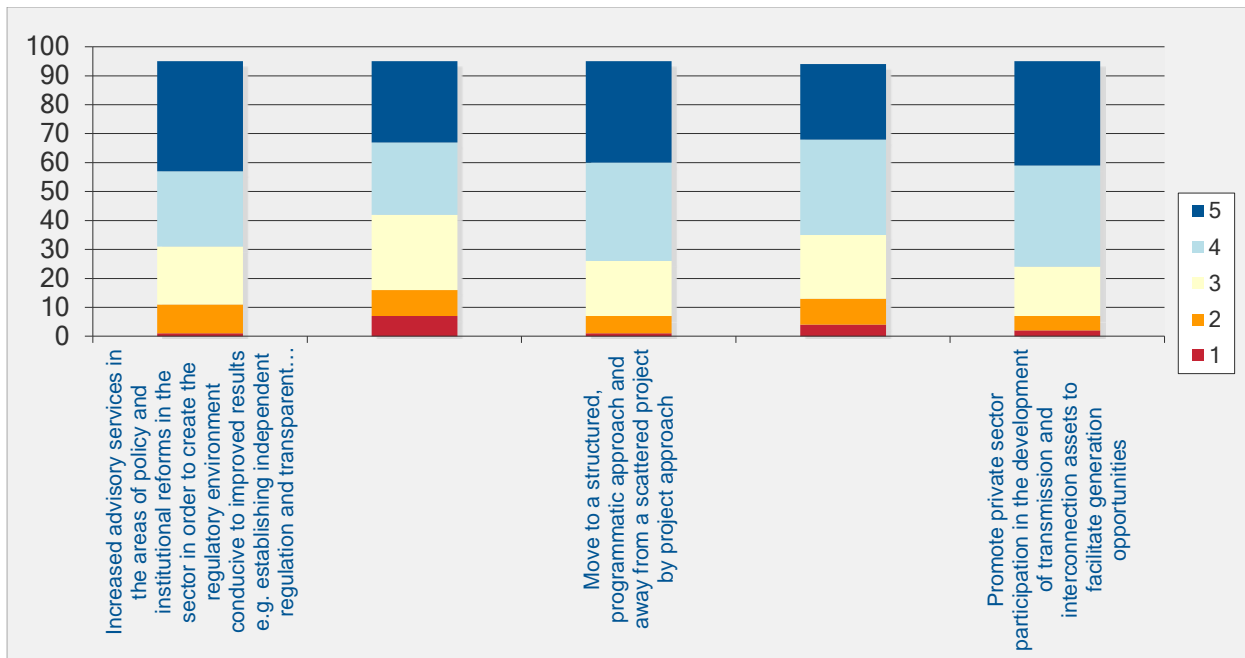
***Q. 42 - Which of these sources of finance / financial innovation do you see as most likely to help bridge the funding gap over the next decade (1 = least likely and 5 = most likely)***

| Which of these sources of finance / financial innovation do you see as most likely to help bridge the funding gap over the next decade (1 = least likely and 5 = most likely) |  |   |    |    |    |    |                |
|---|--|---|----|----|----|----|----------------|
| No  | Answer Options   | 1 | 2  | 3  | 4  | 5  | Response Count |
| 1   | Capital market solutions   | 3 | 10 | 20 | 33 | 29 | 95             |
| 2   | Local and international institutional investors (pension funds and insurance companies)                              | 2 | 9  | 20 | 31 | 34 | 96             |
| 3   | New insurance instruments / guarantees for construction phase risks  | 3 | 19 | 23 | 30 | 19 | 94             |
| 4   | New emerging markets investors (sovereign wealth funds, Chinese and other emerging markets development institutions) | 1 | 7  | 29 | 36 | 22 | 95             |
| 5   | Climate funds  | 3 | 12 | 24 | 29 | 28 | 96             |
| 6   | Technology / EPC contractors as equity co-investors  | 1 | 15 | 35 | 24 | 21 | 96             |
| 7   | Loans provided by EPC contractors to guarantee own performance   | 1 | 21 | 21 | 28 | 23 | 94             |
| 8   | Asset finance provided by technology suppliers   | 4 | 20 | 34 | 19 | 18 | 95             |
| 9   | Government as equity co-investor   | 6 | 18 | 22 | 27 | 22 | 95             |
| answered question   |  |   |    |    |    |    | 96             |
| skipper questions   |  |   |    |    |    |    | 68             |



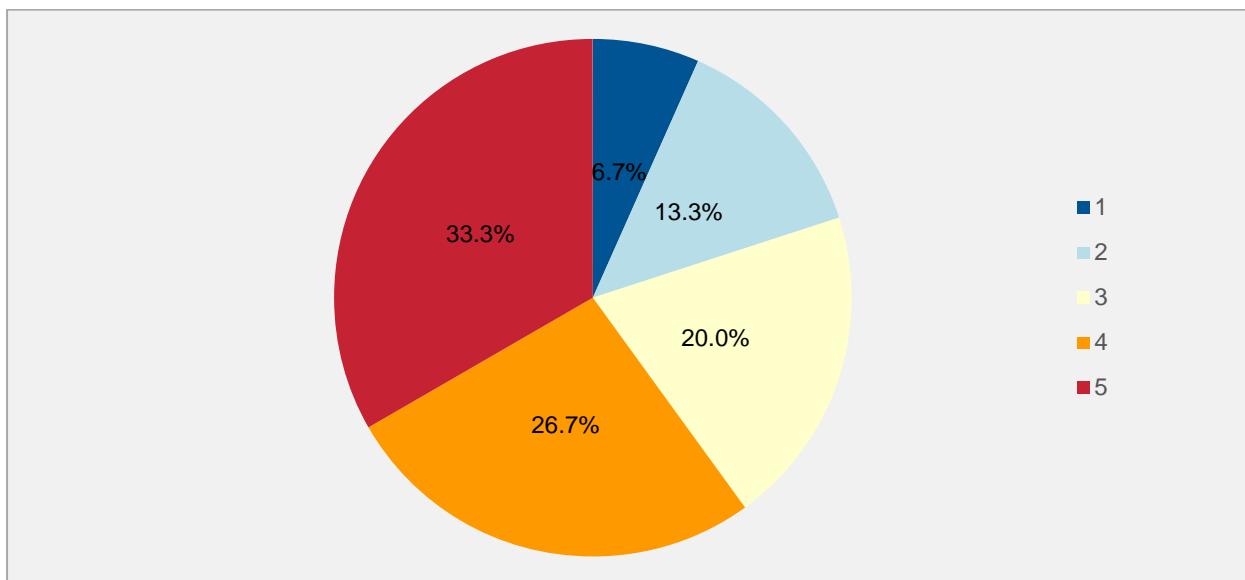
***Q. 44 - In your opinion, on a scale of 1 to 5, how much impact would the following initiatives have on promoting renewable energy development over the next five years (1 = very little or no impact and 5 = very significant impact).***

| Answer Options  | 1 | 2  | 3  | 4  | 5  | Response Count |
|---|---|----|----|----|----|----------------|
| Increased advisory services in the areas of policy and institutional reforms in the sector in order to create the regulatory environment conducive to improved results e.g. establishing independent regulation and transparent pricing mechanisms. | 1 | 10 | 20 | 26 | 38 | 95             |
| More focus on delivering pilot projects rather than capacity building i.e. learning by doing approach   | 7 | 9  | 26 | 25 | 28 | 95             |
| Move to a structured, programmatic approach and away from a scattered project by project approach   | 1 | 6  | 19 | 34 | 35 | 95             |
| Increasing focus on regional / cross-border renewable energy development  | 4 | 9  | 22 | 33 | 26 | 94             |
| Promote private sector participation in the development of transmission and interconnection assets to facilitate generation opportunities   | 2 | 5  | 17 | 35 | 36 | 95             |



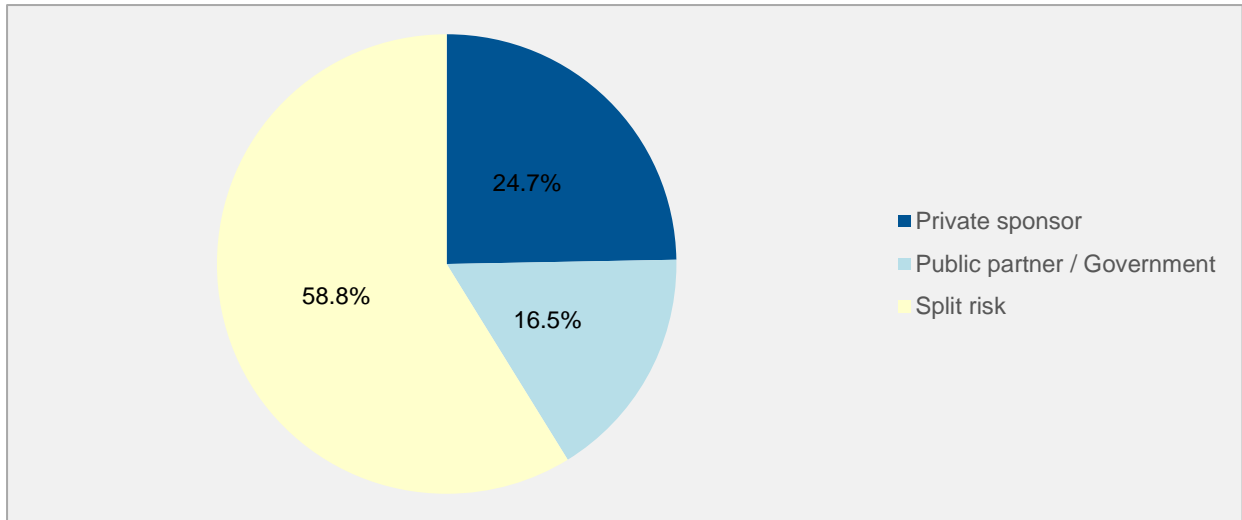
**Q. 46 - Availability of long series of hydrological data**

| Answer Options    | Response Count | Response Percent |
|-------------------|----------------|------------------|
| 1                 | 2              | 2.4%             |
| 2                 | 5              | 5.9%             |
| 3                 | 13             | 15.3%            |
| 4                 | 24             | 28.2%            |
| 5                 | 41             | 48.2%            |
| Answered Question | 85             | 100.0%           |



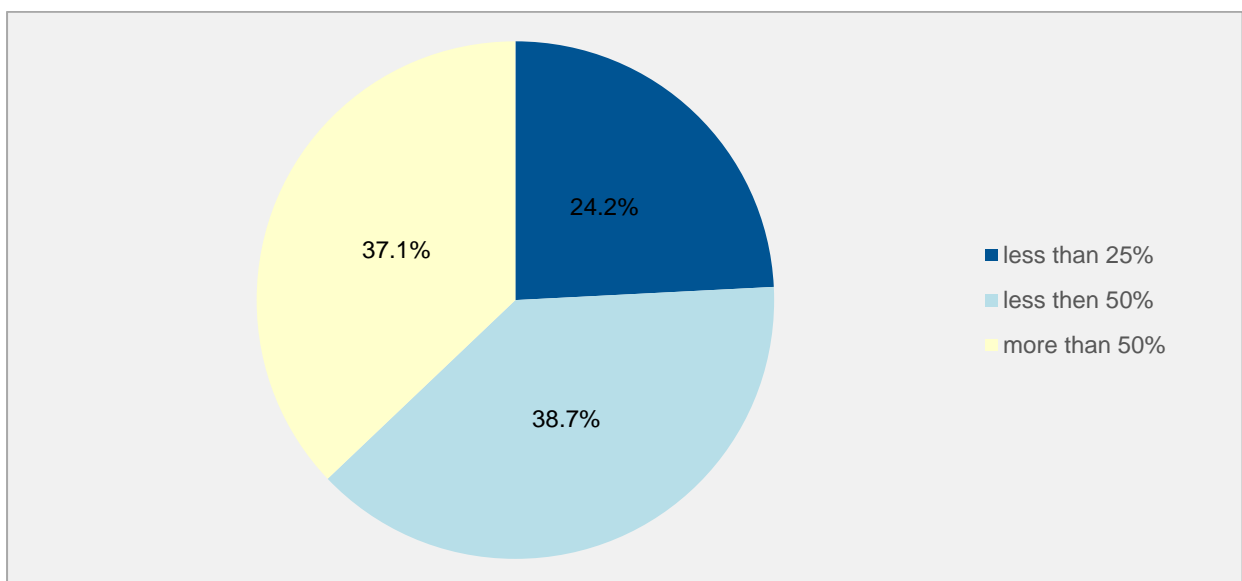
**Q. 47 - Who should assume hydrology risk (risk of below average energy production due to low incoming flows)?**

| Answer Options              | Response Count | Response Percent |
|-----------------------------|----------------|------------------|
| Private sponsor             | 21             | 24.7%            |
| Public partner / Government | 14             | 16.5%            |
| Split risk                  | 50             | 58.8%            |
| Answered Question           | 85             | 100.0%           |



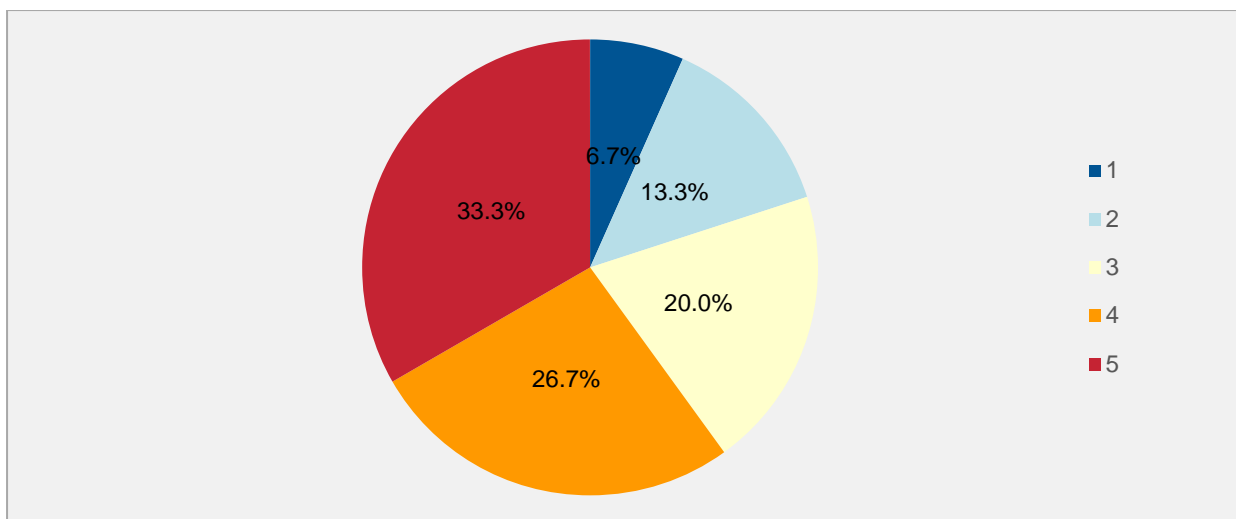
***Q. 48 - if split, how much should private sector take***

| Answer Options    | Response Count | Response Percent |
|-------------------|----------------|------------------|
| less than 25%     | 15             | 24.2%            |
| less than 50%     | 24             | 38.7%            |
| more than 50%     | 23             | 37.1%            |
| Answered Question | 62             | 100.0%           |



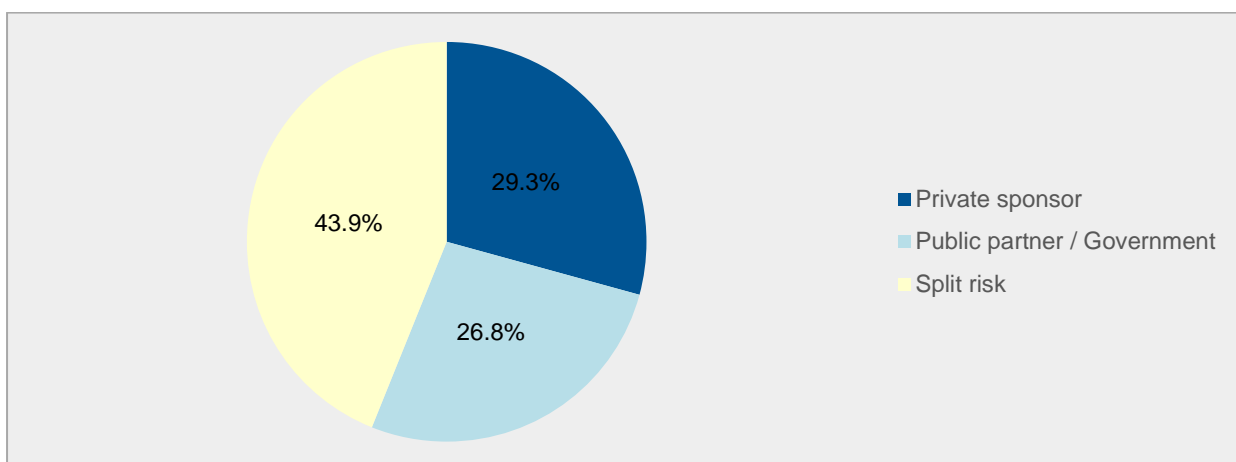
***Q.49 - Detailed geological and geotechnical data***

| Answer Options    | Response Count | Response Percent |
|-------------------|----------------|------------------|
| 1                 | 2              | 2.4%             |
| 2                 | 4              | 4.8%             |
| 3                 | 12             | 14.5%            |
| 4                 | 22             | 26.5%            |
| 5                 | 44             | 53.0%            |
| Answered Question | 83             | 100.0%           |



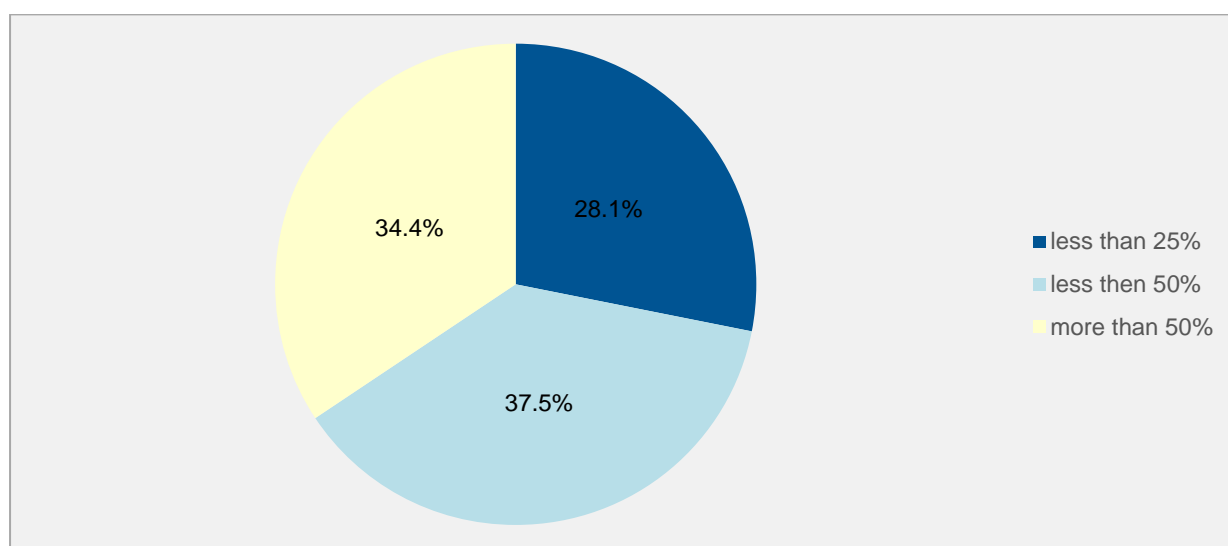
**Q.50 - Which party should assume geological risk (risk of construction cost escalation due to unforeseen ground conditions)?**

| Answer Options              | Response Count | Response Percent |
|-----------------------------|----------------|------------------|
| Private sponsor             | 24             | 29.3%            |
| Public partner / Government | 22             | 26.8%            |
| Split risk                  | 36             | 43.9%            |
| Answered Question           | 82             | 100.0%           |



**Q.51 - if split, how much should private sector take**

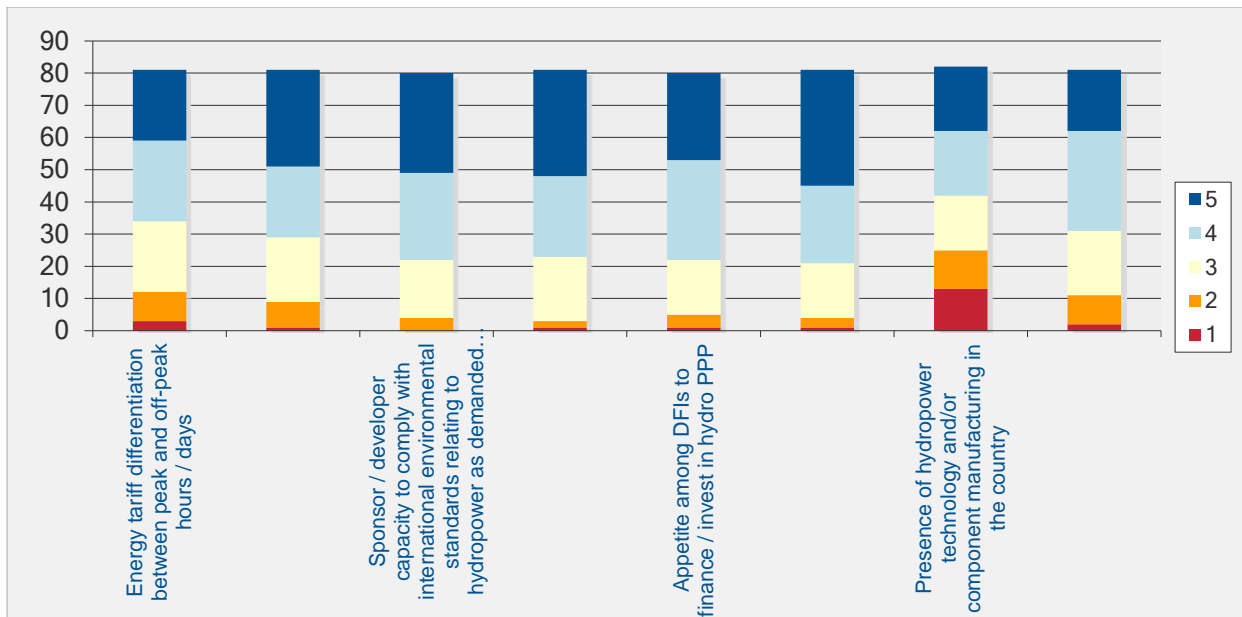
| Answer Options    | Response Count | Response Percent |
|-------------------|----------------|------------------|
| less than 25%     | 18             | 33.3%            |
| less than 50%     | 24             | 44.4%            |
| more than 50%     | 22             | 40.7%            |
| Answered Question | 54             | 100.0%           |



**Q.52 - On a scale of 1 to 5, how important are the following factors to hydro PPP development in the region(s) in which you have worked (1 = not at all important and 5 = extremely important).**

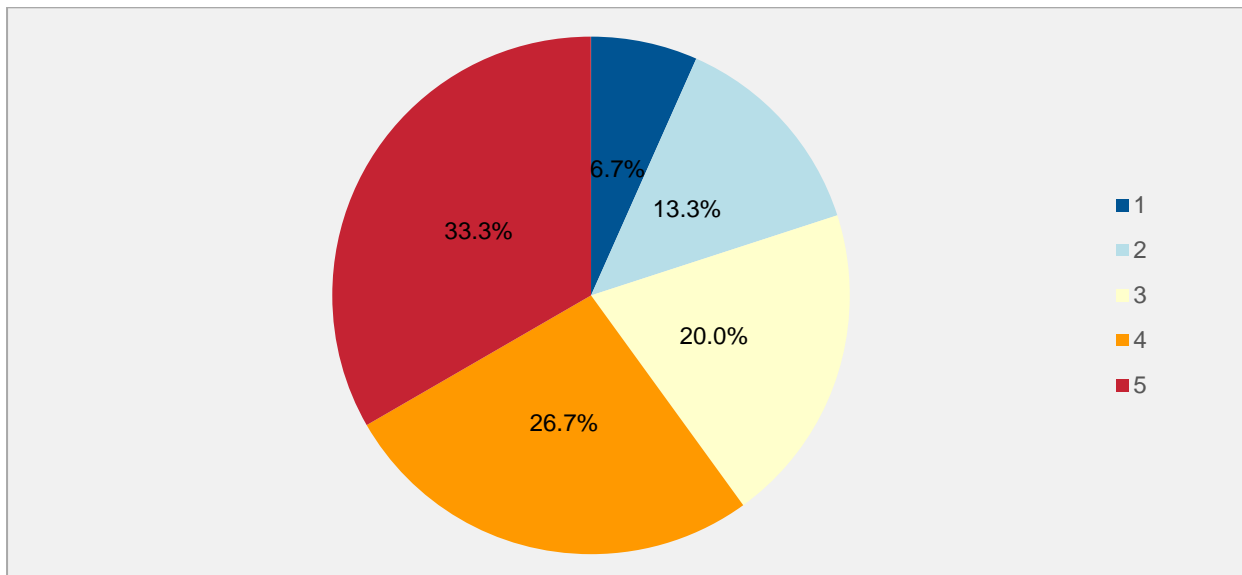
| Answer Options   | 1  | 2  | 3  | 4  | 5  | Response Count |
|--|----|----|----|----|----|----------------|
| Energy tariff differentiation between peak and off-peak hours / days   | 3  | 9  | 22 | 25 | 22 | 81             |
| Well established legal or regulatory framework for the assessment of environmental flow requirements   | 1  | 8  | 20 | 22 | 30 | 81             |
| Sponsor / developer capacity to comply with international environmental standards relating to hydropower as demanded by multilateral lenders | 0  | 4  | 18 | 27 | 31 | 80             |
| Well established legal framework to address resettlement issues and other social impacts   | 1  | 2  | 20 | 25 | 33 | 81             |
| Appetite among DFIs to finance / invest in hydro PPP   | 1  | 4  | 17 | 31 | 27 | 80             |
| Availability of experienced contractors for complex civil works  | 1  | 3  | 17 | 24 | 36 | 81             |
| Presence of hydropower technology and/or component manufacturing in the country  | 13 | 12 | 17 | 20 | 20 | 82             |
| Exemption from (or ability to recover within a short-timeframe) VAT and import duties during the construction phase                          | 2  | 9  | 20 | 31 | 19 | 81             |





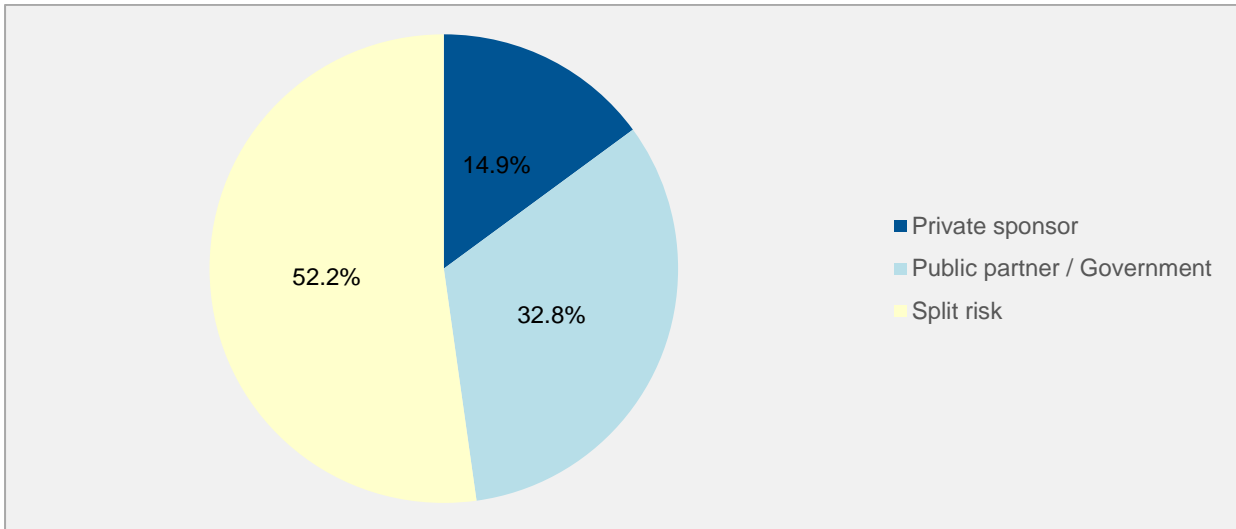
**Q.54 - Availability of detailed geological and geotechnical data**

| Answer Options    | Response Count | Response Percent |
|-------------------|----------------|------------------|
| 1                 | 3              | 4.3%             |
| 2                 | 1              | 1.4%             |
| 3                 | 4              | 5.8%             |
| 4                 | 22             | 31.9%            |
| 5                 | 39             | 56.5%            |
| Answered Question | 69             | 100.0%           |



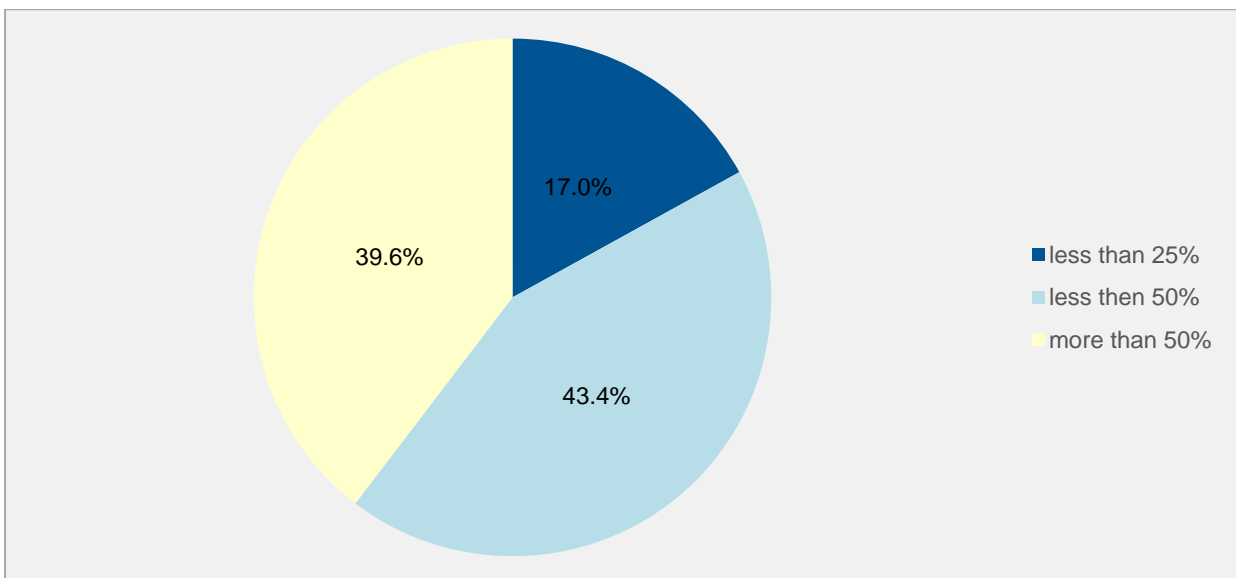
**Q.55 – Who should assume geothermal steam risk (exploration risk)?**

| Answer Options              | Response Count | Response Percent |
|-----------------------------|----------------|------------------|
| Private sponsor             | 10             | 14.9%            |
| Public partner / Government | 22             | 32.8%            |
| Split risk                  | 35             | 52.2%            |
| Answered Question           | 67             | 100.0%           |



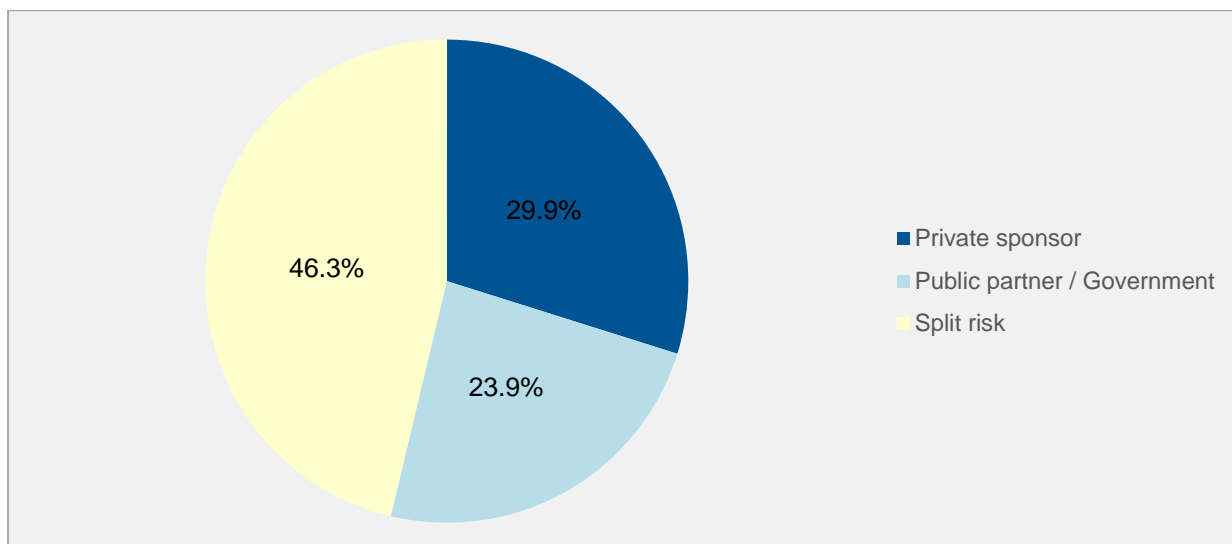
**Q.56 - if split, how much should private sector take**

| Answer Options    | Response Count | Response Percent |
|-------------------|----------------|------------------|
| less than 25%     | 9              | 17.0%            |
| less than 50%     | 23             | 43.4%            |
| more than 50%     | 21             | 39.6%            |
| Answered Question | 53             | 100.0%           |



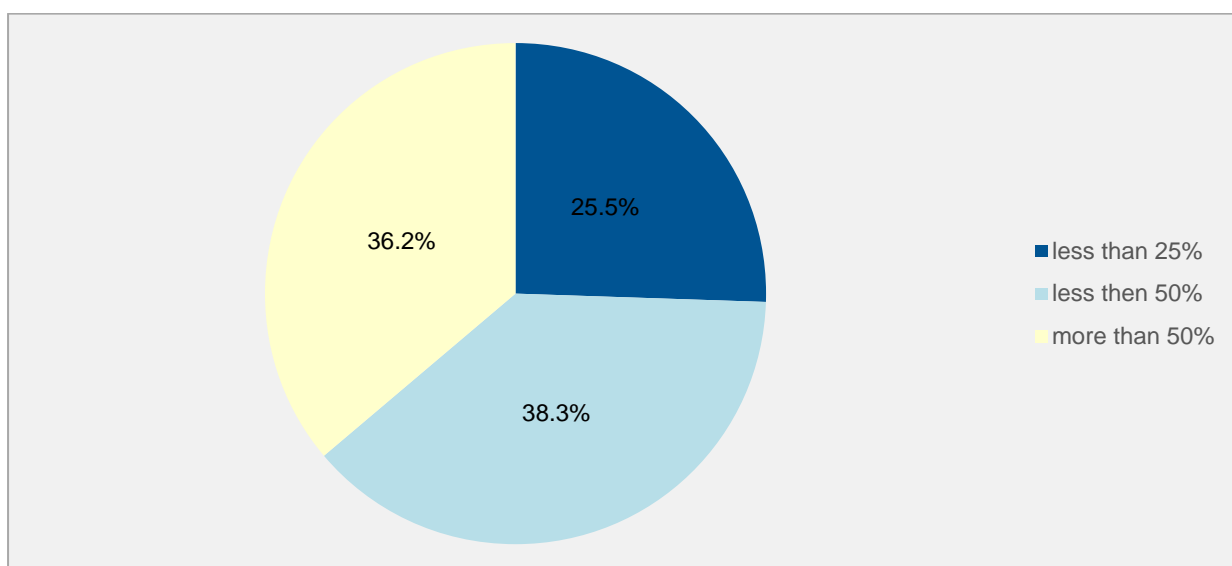
**Q.57 - Who should develop and operate steam field (control of fuel source)?**

| Answer Options              | Response Count | Response Percent |
|-----------------------------|----------------|------------------|
| Private sponsor             | 20             | 29.9%            |
| Public partner / Government | 16             | 23.9%            |
| Split risk                  | 31             | 46.3%            |
| Answered Question           | 67             | 100.0%           |



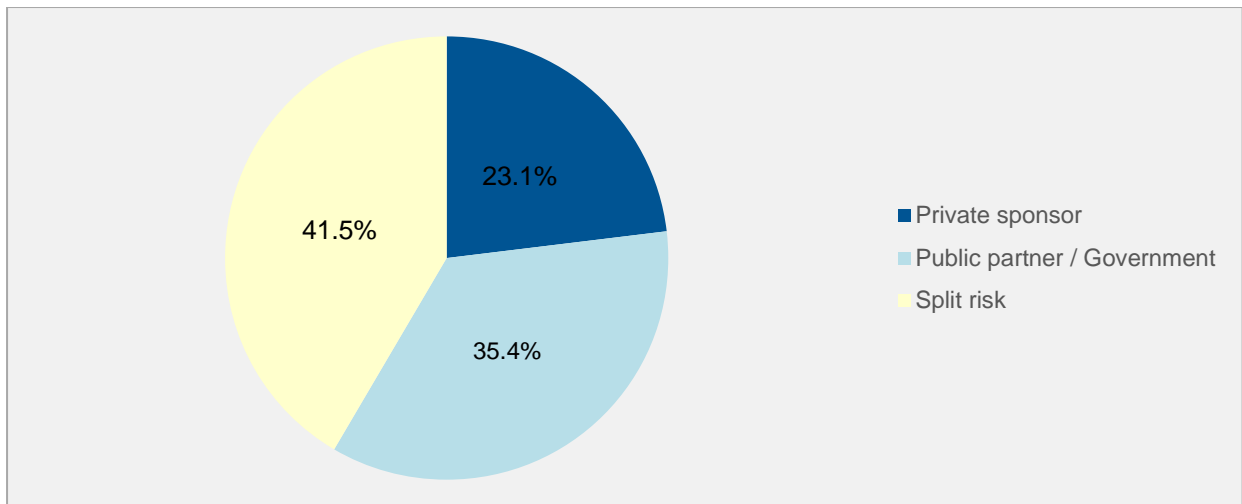
***Q.58 - if split, how much should private sector take***

| Answer Options    | Response Count | Response Percent |
|-------------------|----------------|------------------|
| less than 25%     | 12             | 25.5%            |
| less than 50%     | 18             | 38.3%            |
| more than 50%     | 17             | 36.2%            |
| Answered Question | 47             | 100.0%           |



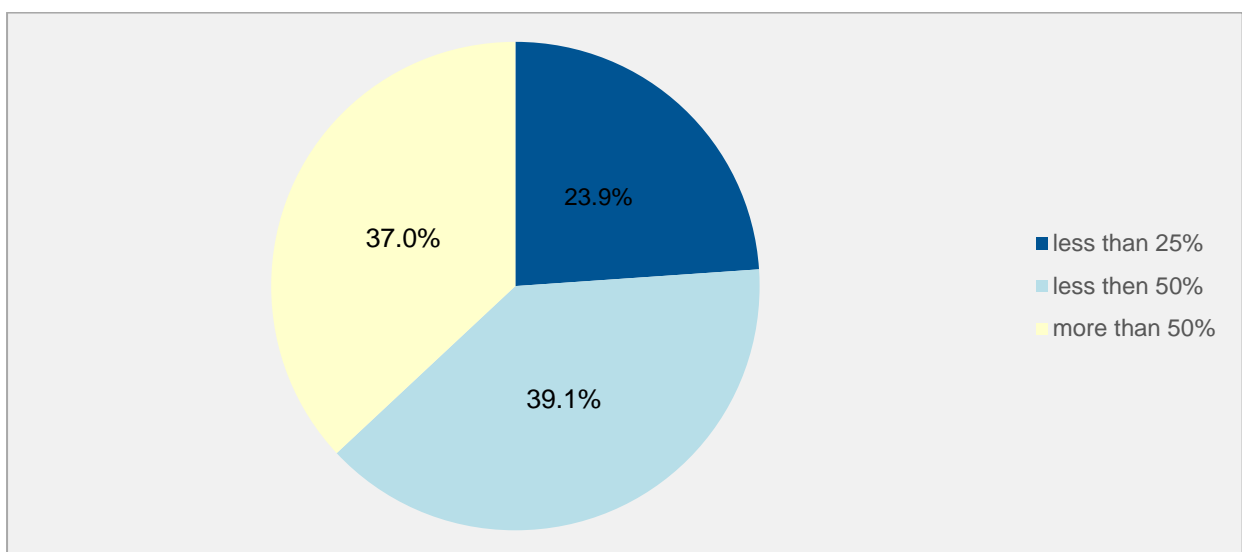
***Q.59 - Which party should assume geological risk (risk of construction cost escalation due to unforeseen ground conditions)?***

| Answer Options              | Response Count | Response Percent |
|-----------------------------|----------------|------------------|
| Private sponsor             | 15             | 23.1%            |
| Public partner / Government | 23             | 35.4%            |
| Split risk                  | 27             | 41.5%            |
| Answered Question           | 65             | 100.0%           |



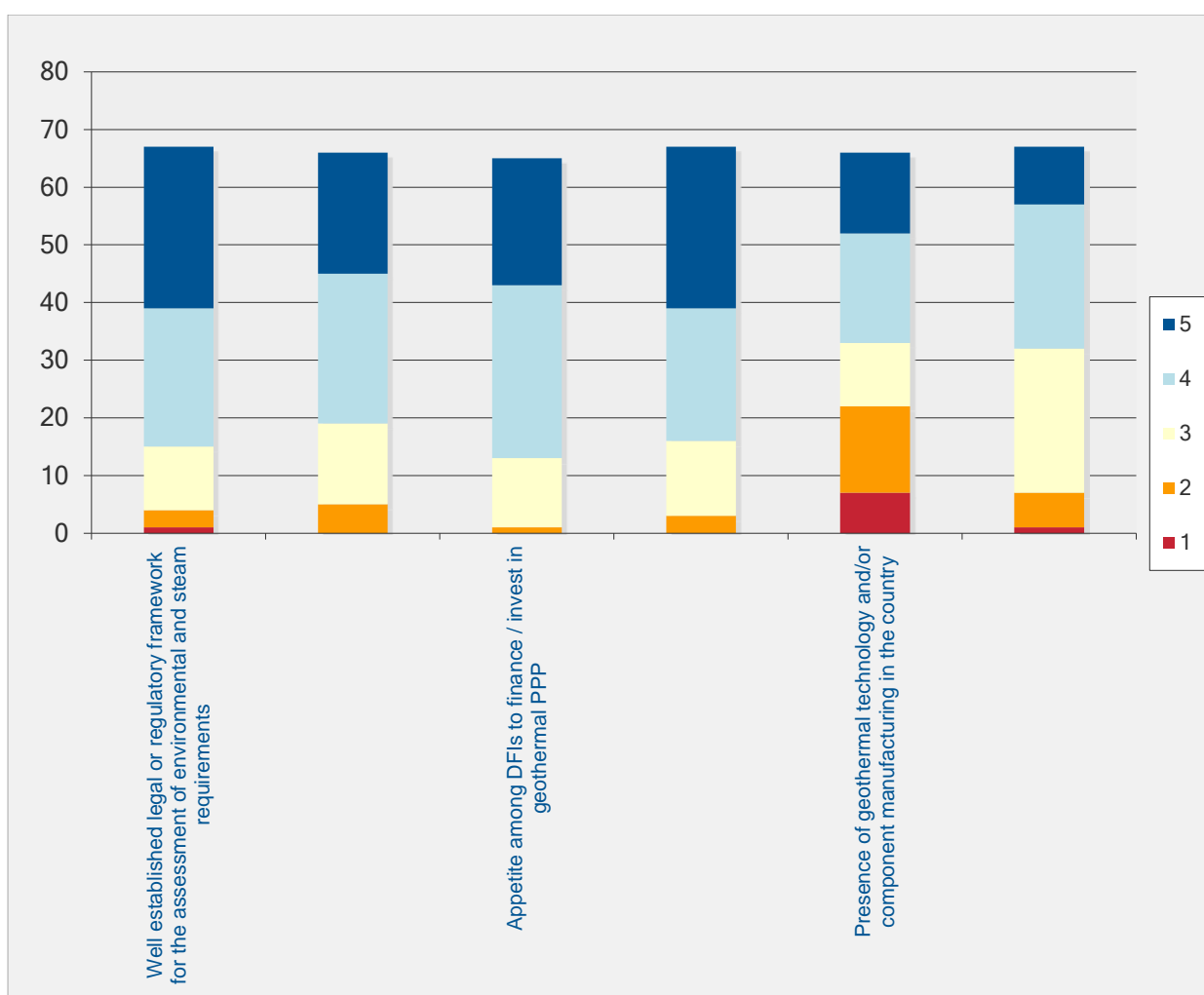
***Q.60 – if split, how much should private sector take***

| Answer Options    | Response Count | Response Percent |
|-------------------|----------------|------------------|
| less than 25%     | 11             | 23.9%            |
| less than 50%     | 18             | 39.1%            |
| more than 50%     | 17             | 37.0%            |
| Answered Question | 46             | 100.0%           |



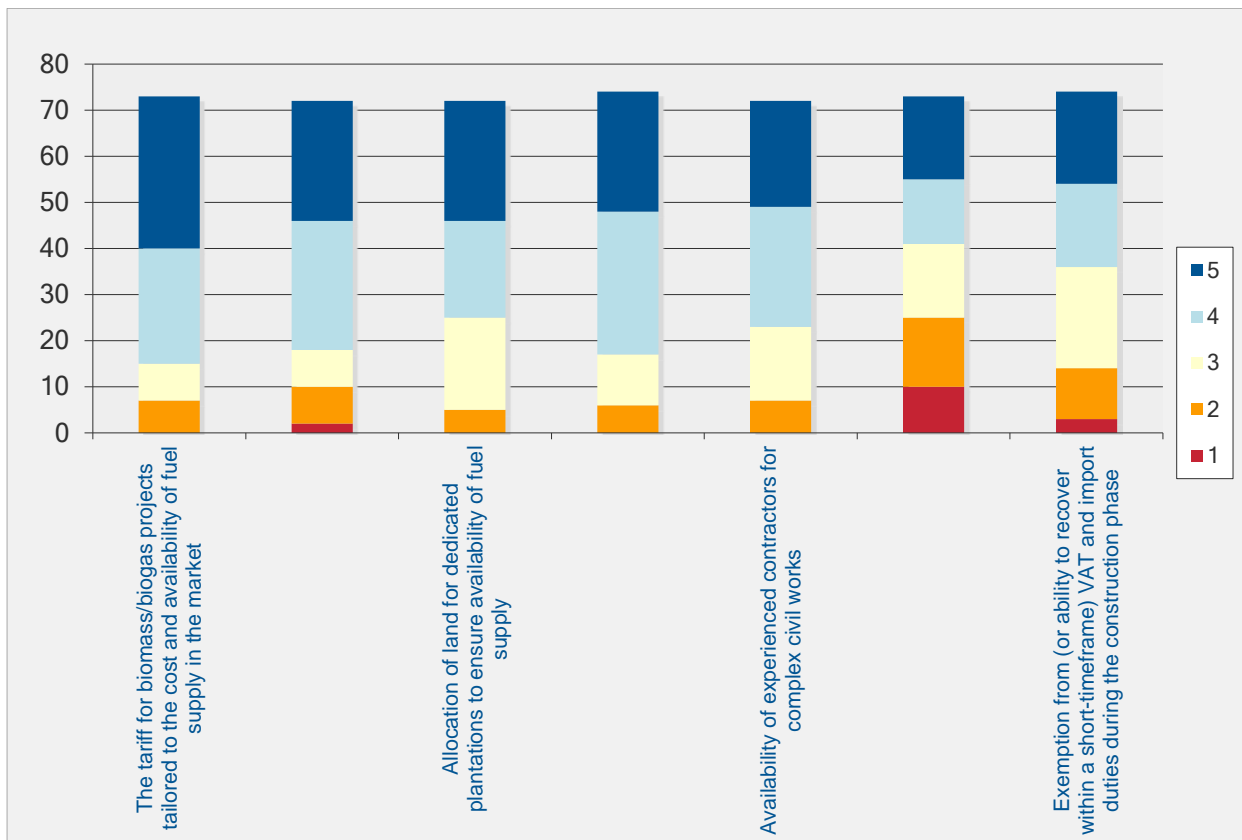
***Q.61 -On a scale of 1 to 5, how important are the following factors to geothermal PPP development in the region(s) in which you have worked (1 = not at all important and 5 = extremely important).***

| Answer Options  | 1 | 2  | 3  | 4  | 5  | Response Count |
|---|---|----|----|----|----|----------------|
| Well established legal or regulatory framework for the assessment of environmental and steam requirements   | 1 | 3  | 11 | 24 | 28 | 67             |
| Sponsor / developer capacity to comply with international environmental standards relating to geothermal developments as demanded by multilateral lenders | 0 | 5  | 14 | 26 | 21 | 66             |
| Appetite among DFIs to finance / invest in geothermal PPP   | 0 | 1  | 12 | 30 | 22 | 65             |
| Availability of experienced contractors for complex civil works   | 0 | 3  | 13 | 23 | 28 | 67             |
| Presence of geothermal technology and/or component manufacturing in the country   | 7 | 15 | 11 | 19 | 14 | 66             |
| Exemption from (or ability to recover within a short-timeframe) VAT and import duties during the construction phase                                       | 1 | 6  | 25 | 25 | 10 | 67             |



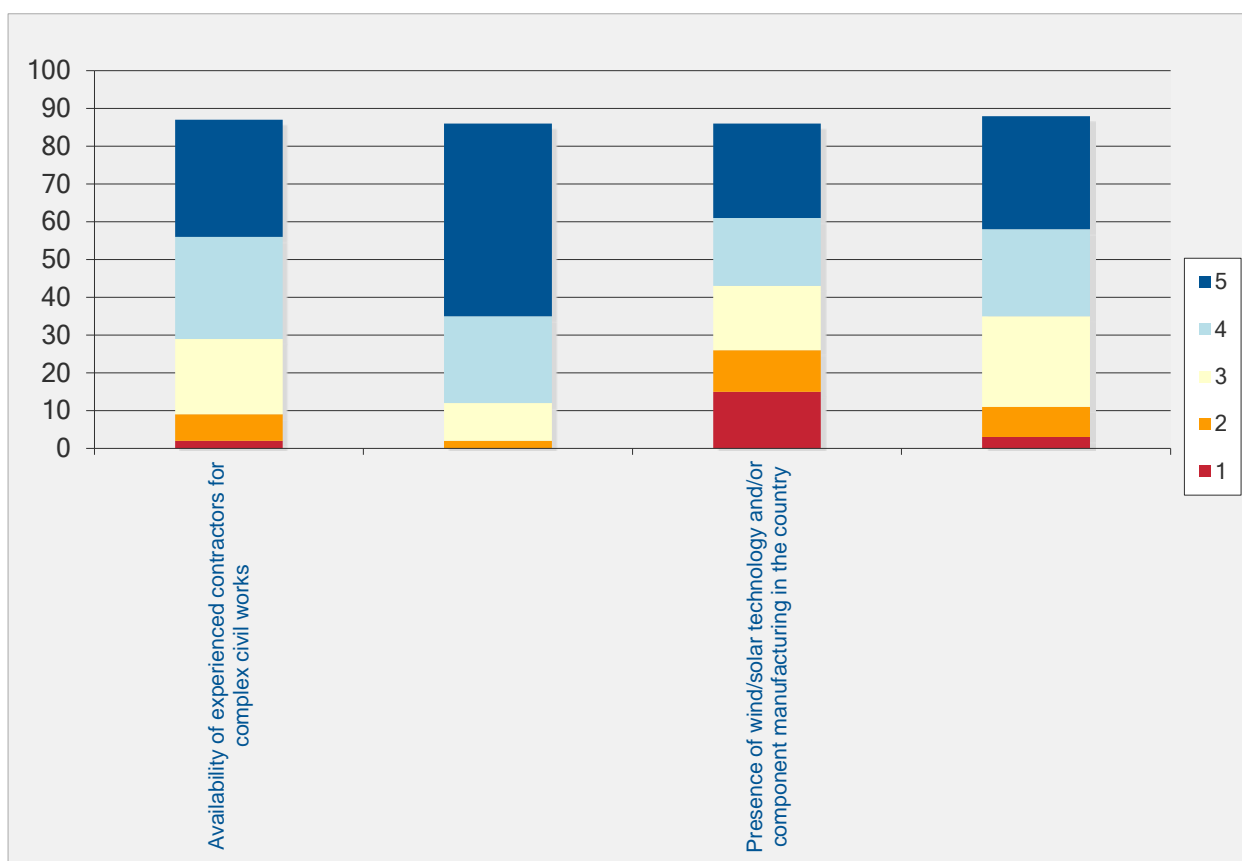
**Q.63 - On a scale of 1 to 5, how important are the following factors to biomass/biogas PPP development in the region(s) in which you have worked (1 = not at all important and 5 = extremely important).**

| Answer Options  | 1  | 2  | 3  | 4  | 5  | Response Count |
|---|----|----|----|----|----|----------------|
| The tariff for biomass/biogas projects tailored to the cost and availability of fuel supply in the market           | 0  | 7  | 8  | 25 | 33 | 73             |
| Availability of a fuel specific tariff or a standardized tariff for all biomass                                     | 2  | 8  | 8  | 28 | 26 | 72             |
| Allocation of land for dedicated plantations to ensure availability of fuel supply                                  | 0  | 5  | 20 | 21 | 26 | 72             |
| Long term contracts available to decrease resource price variability  | 0  | 6  | 11 | 31 | 26 | 74             |
| Availability of experienced contractors for complex civil works   | 0  | 7  | 16 | 26 | 23 | 72             |
| Presence of biomass/biogas technology and/or component manufacturing in the country                                 | 10 | 15 | 16 | 14 | 18 | 73             |
| Exemption from (or ability to recover within a short-timeframe) VAT and import duties during the construction phase | 3  | 11 | 22 | 18 | 20 | 74             |



**Q.65 - On a scale of 1 to 5, how important are the following factors to wind and solar PPP development in the region(s) in which you have worked (1 = not at all important and 5 = extremely important).**

| Answer Options  | 1  | 2  | 3  | 4  | 5  | Response Count |
|---|----|----|----|----|----|----------------|
| Availability of experienced contractors for complex civil works   | 2  | 7  | 20 | 27 | 31 | 87             |
| Readiness of grid for intermittent nature of solar / wind (variable energy intake)                                  | 0  | 2  | 10 | 23 | 51 | 86             |
| Presence of wind/solar technology and/or component manufacturing in the country                                     | 15 | 11 | 17 | 18 | 25 | 86             |
| Exemption from (or ability to recover within a short-timeframe) VAT and import duties during the construction phase | 3  | 8  | 24 | 23 | 30 | 88             |



**Q.69 - Were any of the following goals targeted in the energy PPP programme and/or project(s) that you have been involved with? If so, can you provide examples and describe their outcomes?**

| No | Answer Options | Response Count | Response Percent |
|----|----------------|----------------|------------------|
|----|----------------|----------------|------------------|

|                   |  |    |        |
|-------------------|--|----|--------|
| 1                 | Energy projects that provided increased access to affordable, reliable and modern energy services?   | 40 | 67.80% |
| 2                 | Energy projects that increased the share of renewable energy in a traditional energy mix?  | 42 | 71.19% |
| 3                 | Energy projects that upgraded technology, infrastructure or retrofitted systems to make them sustainable, (increased efficiency, clean and environmentally sound technology energy processes)?   | 27 | 45.76% |
| 4                 | Energy projects that enhanced or facilitated access to and investment in clean renewable energy research, scientific research, technological capabilities, and/or innovation in the jurisdiction of the project?   | 24 | 40.68% |
| 5                 | Energy projects that improved the resilience of energy systems and reduced exposure to climate-related extreme events and/or other economic, social and environmental shocks and disasters?  | 23 | 38.98% |
| 6                 | Energy projects that mobilized resources from a variety of sources, including through enhanced development cooperation, assistance or financial flows, that provided new/improved opportunities to implement energy programmes and policies or improve foreign direct investment to a State in need? | 24 | 40.68% |
| Answered Question |  | 59 |        |

