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Derisking Renewable Energy Investment (www.undp.org/DREI)
Case Study
Answer Sheet

STEP 1: MODELLING BASELINE ENERGY GENERATION COSTS

1.1: What is the LCOE of the baseline energy mix?
ANSWER: 10.0 USDcents/kWh

STEP 2: DESIGNING THE CORNERSTONE INSTRUMENT ONLY POLICY DESIGN

2.1: What is the LCOE of onshore wind power in Country X (in USD cents per kWh) assuming the *cornerstone instrument only policy design*?
ANSWER: 10.8 USDcents/kWh

2.2: What is an appropriate tariff (in USD cents per kWh) for the FiT in Country X in order to catalyse private sector investment?
ANSWER: 10.8 USDcents/kWh or more

STEP 3: DESIGNING THE PUBLIC INSTRUMENT PACKAGE RE POLICY

3.1: What are the LCOE of onshore wind power (in USD cents per kWh) assuming the *public instrument instrument package RE policy*?
ANSWER: 10.5 USDcents/kWh

3.2: What is an appropriate tariff (in USD cents per kWh) for the FiT?
ANSWER: 10.5 USDcents/kWh or more

STEP 4: COMPARING THE COSTS AND EFFECTS OF BOTH POLICY DESIGNS

4.1: How do the onshore wind energy LCOEs in Country X differ between the two policy designs?
ANSWER: They differ by 0.3cents, which corresponds to a reduction of 2.7% through derisking

And how do the incremental costs (i.e., the additional costs of wind over the baseline) differ?
ANSWER: They differ by 0.3cents, which corresponds to a reduction of 37.5% through derisking

What does this imply for the affordability of electricity for the end consumer in Country X?
ANSWER: If the FiT is re-financed through increased end consumer tariffs, de-risking can reduce the tariff increase substantially.

4.2: What is the difference in financing costs for wind energy between the two policy designs?
ANSWER: 0.8%points in terms of equity (corresponding to a 5.6% reduction) and 0.5%points in terms of debt (corresponding to a 5% reduction)

4.3: How much private sector investment will the policy designs trigger?
ANSWER: 1bn USD

4.4: What are the total public costs (policy derisking and price premium) of the two alternative RE policies? What is the breakdown between policy derisking instrument costs and incremental cost (FIT premium)?
ANSWER:

- **Total costs: Cornerstone RE policy : 162.5million USD; Public Instrument package RE policy: 106.9million USD**
- **Breakdown: Cornerstone RE policy: 1% derisking / 99% premium; Public Instrument package RE policy:**
  10% derisking / 90% premium

4.5: How does the investment leverage ratio compare between the two alternative RE policies? What is the main public cost component that drives the leverage ratio in Country X?
ANSWER:

- **Investment leverage ratio: Cornerstone RE policy ratio: 6.2; Public Instrument package RE policy: 9.4**
- **Main component: the FiT premium**

4.6: What is the savings leverage ratio of the additional instruments in the *public instrument package RE policy*?
ANSWER: 6.6

4.7: Over the 20 year lifetime, what are estimated emission reductions that result from the wind energy investment in the RE policies?
ANSWER: 7.1 million tons of CO_2

4.8: What are the carbon abatement costs of both policy designs?
ANSWER: Cornerstone RE Policy: 23.02 USD/tonCO2; Public Instrument RE policy: 15.15 USD/tonCO2 (which corresponds to a reduction of almost 40%)

FURTHER QUESTIONS FOR DISCUSSION:

D.2: What are the impacts of a 20% fuel subsidy on the costs of both RE policy?
ANSWER:

- **Cornerstone RE policy: 449million USD; Public Instrument RE policy: 393million USD**
- **Cornerstone RE policy: 63.60 USD/tonCO2; Public Instrument RE policy: 55.72 USD/tonCO2**

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