

TASK 2 : STAKEHOLDER CONSULTATION WORKSHOP

On

Proposed BCS Framework for India



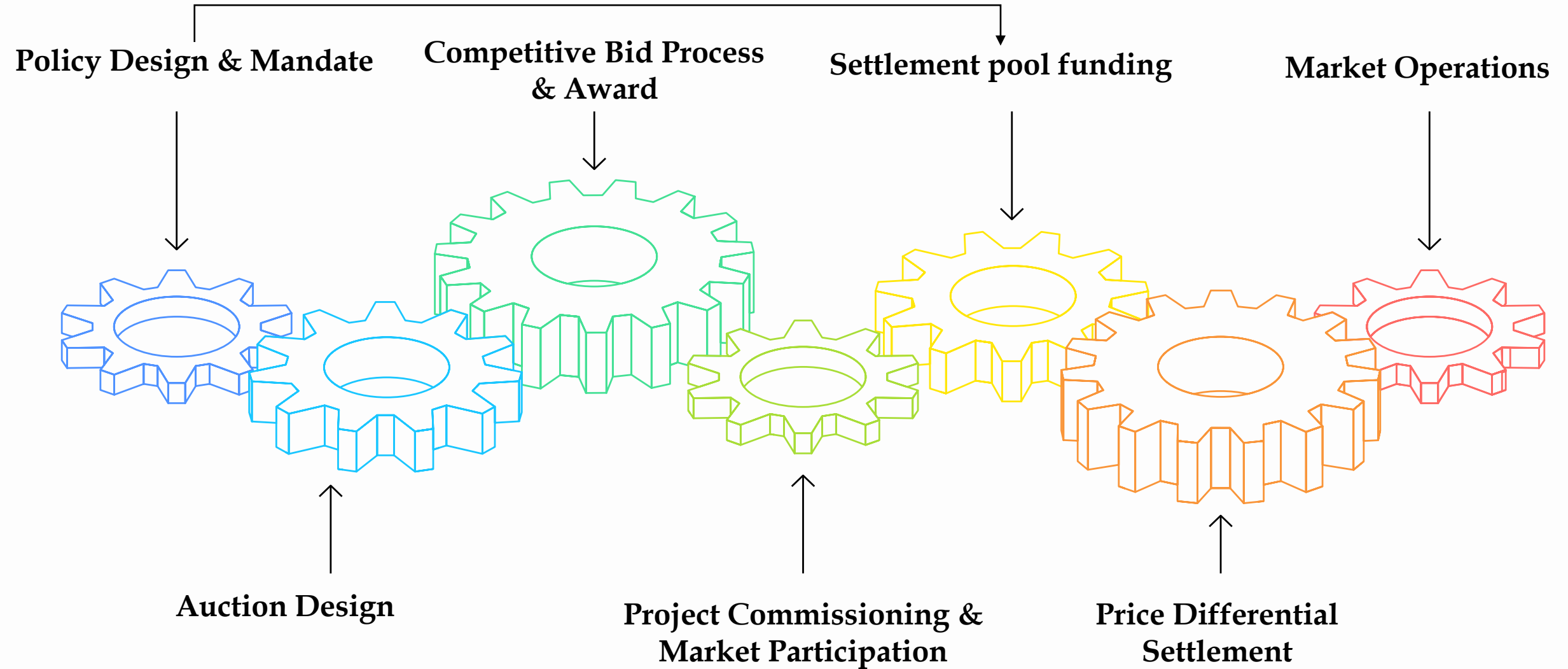
Session 3: Proposed BCS Design for India

1.Key Design Options for BCS Framework

2.Proposed BCS Framework for India

Key Design Options for BCS Framework

Typical Workflow Processes



Key Design Considerations for India

Type of Contract

Two-way or One-way, Floor-Cap or other CfD structure, etc

Technology Coverage

Solar, Wind, BESS, FDRE, Nuclear or Technology-neutral

Auction Tech specific or Neutral

Technology-specific, Technology-neutral or Hybrid auctions

ASP Determination

Cost-based technology-specific ASP or Budget driven ASP

Funding Source for Settlement Pool

Consumer levy, Budget support, Market participants or Hybrid funding

Settlement Frequency

Daily, Monthly, Quarterly or Annual settlement

Contract Tenure

10, 15 or 20 years

Auction Design for selection

Pay-as-bid or Pay-as-clear

BCS Institutional Design

Multiple institutions or Single all-in-one

1. Type of CfD Contract (1/2) : Definition

The CfD type defines how the contract settles the difference between the SP and the RP and whether upside revenue is retained, shared or capped

One-way CfD

- Generator has no downside risk ($RP < SP$)
- Pool bears $SP - RP$ difference
- Lends high bankability
- High fiscal exposure
- No upside clawback

Two-way CfD

- Surplus/Deficit shared equally by Seller/Buyer
- Better consumer fairness
- Lower net fiscal exposure
- Hedges buyer from high volatility

Collar CfD (Floor + Cap)

- Revenue protected within a band
- Limits extreme gains and losses
- Good when some flexibility is needed

United Kingdom



Two-way CfD

Germany



Two-way CfD

Greece



Two-way CfD

Australia



Two-way CfD
with Collar

1. Type of CfD Contract (2/2) : Comparative Matrix

Parameter	One-way CfD	Two-way CfD	Collar CfD
Risk sharing (<i>generator perspective</i>)	✓✓✓	✓✓	✓
Fiscal control	✗	✓	✓✓
Bankability	✓✓✓	✓✓	✓
Windfall clawback	✗	✓	✓
Simplicity	✓✓✓	✓✓	✓
Consumer Friendly	✗	✓✓	✓✓

2. Technology Coverage (1/2) : Definition

Eligible technologies determine which generation types can participate in the CfD scheme. This affects competition, policy reach & how quickly the scheme can scale & ASP determination. Gov prerogative.

Narrow eligibility

- Limits participation to a few mature technologies
- Easier to administer
- Keeps competition focused
- Reduces technology complexity
- But excludes newer or less established options

Moderate eligibility

- Allows a wider but still controlled technology set
- Improves participation without making the scheme too complex
- Balances competition and manageability

Wide eligibility

- Opens the scheme to most renewable technologies
- Broadens market access
- Increases policy reach
- Adds complexity in rules & evaluation
- Useful where the market is already mature

United Kingdom



Moderate
Eligibility

Germany



Moderate
Eligibility

Greece



Moderate
Eligibility

Australia



Moderate
Eligibility

2. Technology Coverage (2/2) : Comparative Matrix

Parameter	Narrow eligibility	Moderate eligibility	Wide eligibility
Simplicity	✓✓✓	✓✓	✓
Competition	✓	✓✓	✓✓✓
Technology coverage	✓	✓✓	✓✓✓
Administrative ease	✓✓✓	✓✓	✓
Pilot suitability	✓	✓✓	✓✓✓

3. Auction Tech specific or Neutral (1/2) : Definition

Auction design determines how bids are collected, compared & awarded under the BCS scheme. The main question is whether the auction should be technology-specific or technology-neutral

Technology-specific

- Separate pots for each tech
- Better for tech targeting
- Easier to protect next gen
- Less cross-tech competition
- Good when policy wants diversity

Technology-neutral

- All eligible tech compete together
- Improves allocative efficiency
- Stronger price competition
- Can disadvantage new techs

United Kingdom



Technology-specific

Germany



Technology-specific

Greece



Technology-specific

Australia



Tech/Category
Specific
Gov decision

3. Auction Tech specific or Neutral(2/2) : Comparative Matrix

Parameter	Technology-specific	Technology-neutral
Technology targeting	✓✓✓	✗
Price competition	✓✓	✓✓✓
Enabling emerging technology	✓✓	✗
Price discovery	✓	✓✓
Simplicity	✓✓	✓✓✓
Best for pilot	✓✓✓	✓

4. Administrative Strike Price Determination (1/2) : Definition

Administrative Strike Price Determination (ASP) sets the maximum support level or ceiling below which auction bids occur. It is the price benchmark that shapes budget for the settlement pool & bidder participation

Cost-based technology-specific ASP

- Reflects project economics and technology costs
- Provides realistic ceiling per technology
- Prevents under pricing mature/expensive projects
- Ideal for technology-differentiated policy

Budget driven ASP

- Set within a fixed spending envelope.
- Keeps total support under control.
- Improves fiscal discipline.
- Can reduce room for aggressive bids.
- Best when budget certainty is the main goal

United Kingdom

Technology-specific ASP cap

Germany

Technology-specific auction ceiling

Greece

Technology-specific price ceilings

Australia

Budget-linked support ceiling

4. Administrative Strike Price Determination (2/2) : Comparative Matrix

Parameter

Reflects technology-specific costs
Provides a realistic bidding ceiling
Supports competitive price discovery
Investor confidence and bankability
Transparency & ease of stakeholder acceptance
Protection against overcompensation
Fiscal predictability for government
Administrative simplicity
Adaptability to market changes
Suitability for technology differentiation
Risk of under-subscription
Risk of excessive subsidy payments
Suitability for emerging technologies
Suitability for mature technologies

Technology-Specific ASP

Budget Driven ASP

✓✓✓	✓✓
✓✓✓	✓✓
✓✓✓	✓✓
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✓✓✓	✓✓✓

5. Funding Source for Settlement Pool (1/2) : Definition

Funding source for the settlement pool is critical to show confidence and payment security for the BCS mechanism.

Levy (Rate payer)

- Funded by charge across consumers/suppliers
- Predictable collection, aligns cost with use
- Simple to administer
- Will increase tariffs & distort tariff structures
- Best for self-funded schemes

Surcharge (Rate payer)

- Funded via charge on specific customer class
- May distort tariff structures
- Best when protecting consumer groups
- Best for self-funded schemes

Budget (Tax payer)

- Funded from general government revenues
- Shifts cost to taxpayers vs. bills
- Improves consumer affordability
- Competes with other public spending
- Best for stronger fiscal control

United Kingdom

Levy

Germany

Budget

Greece

Levy

Australia

Budget

5. Funding Source for Settlement Pool (2/2) : Comparative Matrix

Parameter	Levy	Surcharge	Budget
Cost visibility to consumers	✓✓	✓	X
Fiscal pressure on taxpayers (<i>developer perspective</i>)	X	X	✓✓✓
Administrative simplicity (<i>administrator perspective</i>)	✓✓	✓	✓✓✓
Funding flexibility	✓✓	✓	✓✓✓
Pilot suitability	✓	✓	✓✓✓

6. Settlement Frequency (1/2) : Definition

Settlement frequency determines how often the CfD pays or recovers the difference between SP & RP . It affects cash flow, liquidity, administrative effort & how quickly market price changes are passed through

Daily settlement

- Fastest cash flow response
- Lowest build-up of exposure

Monthly settlement

- Balanced timing for cash flow
- Easier than daily settlement
- Keeps exposure manageable

Quarterly settlement

- Reduces settlement frequency
- More time for data reconciliation
- Weaker option for timely price pass-through

Annual settlement

- Simplest from an invoicing perspective
- Cash flow management is difficult
- Weaker option for timely price pass-through

United Kingdom

Monthly

Germany

Monthly

Greece

Monthly

Australia

Annual

6. Settlement Frequency (2/2) : Comparative Matrix

Parameter	Daily settlement	Monthly settlement	Quarterly settlement	Annual settlement
Cash-flow stability	✓✓✓✓	✓✓✓	✓✓	✓
Liquidity support	✓✓✓✓	✓✓✓	✓✓	✓
Administrative ease	✓	✓✓	✓✓✓	✓✓✓✓
Data and reconciliation load	✓	✓✓	✓✓✓	✓✓✓✓
Timely price pass-through	✓✓✓✓	✓✓✓	✓✓	✓
Best for pilot	✓✓	✓✓✓✓	✓✓✓	✓

7. Contract Tenure (1/2) : Definition

Contract tenure determines how long the CfD remains active & therefore how long the generator is protected from wholesale price volatility. It affects bankability, investor confidence & the government's long-term commitment

Short tenure (<15yrs)

- Faster end of support
- Lower long-term commitment
- Higher refinancing or repricing risk
- Less attractive for bankability
- Useful when policy flexibility matters most

Medium tenure (15 years)

- Balanced support duration
- Enough time to underpin financing
- Leaves room for future policy adjustment
- More stable than short tenure

Long tenure (>15 years)

- Highest revenue certainty
- Strongest support for project finance
- Greater policy lock-in
- Less flexibility to revise scheme design
- Useful where investment certainty is the priority

United Kingdom

20 years

Germany

10-15 years

Greece

20 years

Australia

10-15 years

7. Contract Tenure (2/2) : Comparative Matrix

Parameter	Short tenure (<15yrs)	Medium tenure (15yrs)	Long tenure (>15yrs)
Bankability	✓	✓	✓✓
Investor confidence	✓	✓✓	✓✓✓
Policy flexibility	✓✓✓	✓✓	✓
Exposure to market volatility	✓	✓✓	✓✓✓
Ease of future revision	✓✓✓	✓✓	✓
Best fit for pilot	✓	✓✓✓	✓✓

8. Auction Design for Selection (1/2) : Definition

Auction Design for selection determines how bids are submitted, ranked & awarded within the CfD scheme. It shapes transparency, competition & how efficiently the scheme discovers a market-clearing SP

Pay-as-clear

- Reveals the market-clearing support level
- Encourages bidding close to true costs
- Awards at lowest uniform clearing price
- Single clearing price easy to administer
- Predictable and familiar auction design

Pay-as-bid

- Bidders focus on guessing clearing prices
- Encourages strategic bidding
- Results in inefficient bid shading
- Different winners receive different support levels
- Uncertainty regarding optimal bidding strategy

United Kingdom

Pay-as-clear

Germany

Pay-as-bid

Greece

Pay-as-bid

Australia

Pay-as-bid

8. Auction Design for Selection (2/2) : Comparative Matrix

Parameter	Pay-as-clear	Pay-as-bid
Transparency	✓✓	✓
Competition	✓✓	✓✓
Price discovery	✓	✓✓
Administrative simplicity	✓✓	✓
Bid strategy complexity	✓	✓✓
Pilot suitability	✓	✓✓
Net cost to budget/consumer	✓	✓✓

9. Institutional Architecture (1/2) : Definition

Institutional architecture defines the roles, responsibilities, and coordination structure needed to run the CfD scheme. It affects accountability, implementation speed, and whether the scheme can scale beyond a pilot.

Single Agency

- Ministry set policy, agency handles operations
- Practical, focused execution
- Reduces direct government workload

Multi-Institution

- Diff bodies handle policy, regulation, implementation, settlement, oversight
- Improves specialization, checks/balances
- Reduces single-point dependence
- Needs strong coordination
- Best for scalability

United Kingdom



Multi-Institution

Germany



Multi-Institution

Greece



Multi-Institution

Australia



Multi-Institution

9. Institutional Architecture (2/2) : Comparative Matrix

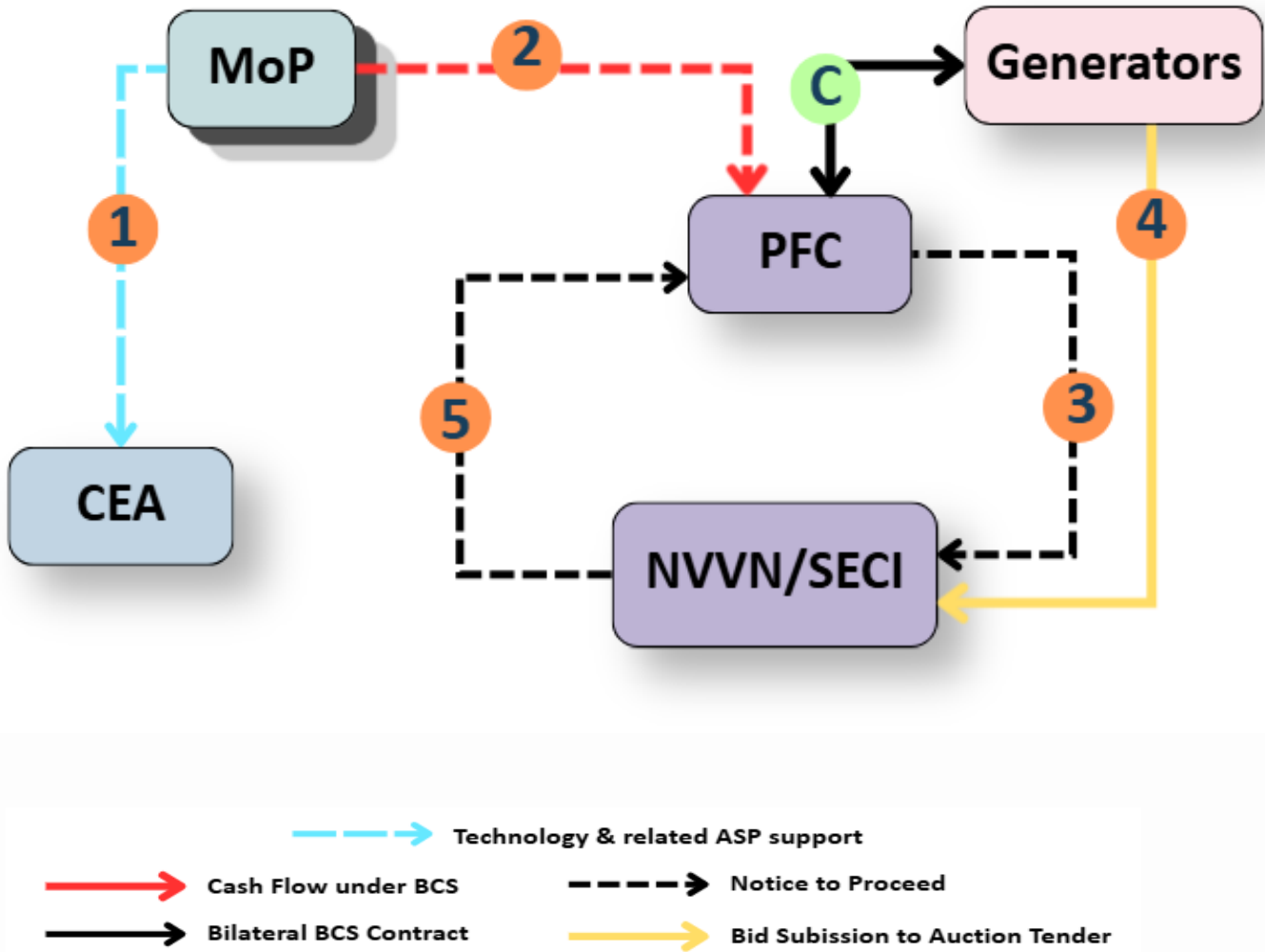
Parameter	Single Agency-led structure	Multi-institution –led structure
Accountability	✓	✓✓
Speed of decisions	✓✓	✓
Coordination/Bureaucracy burden	✓✓	✓
Scalability	✓	✓✓
Pilot suitability	✓✓	✓
Risk Allocation/Mitigation	✓	✓✓
Responsiveness to meet future system requirements	✓	✓✓
Ability to respond to Transmission/Infrastructure needs	✓	✓✓
Ability to function in the concurrent power sector market	✓	✓✓

Proposed BCS Framework for India

Summary of Design Recommendations for BCS

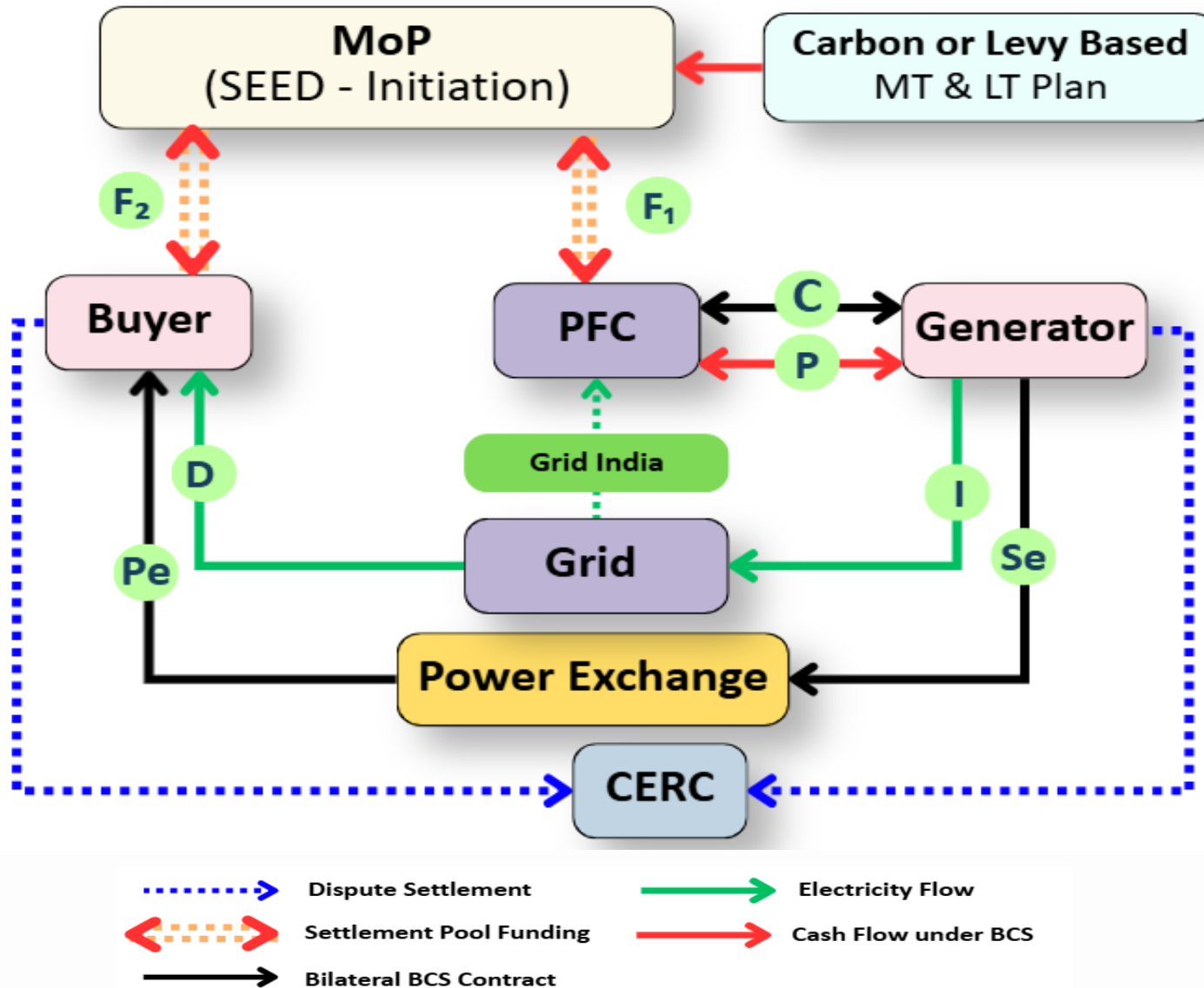
Design Elements	Recommended Option
Type of BCS Contract	Two-way CfD kind
Technology Coverage	Moderate Eligibility
Auction Tech specific or Not	Technology-Specific
ASP Determination	Technology-Specific
Funding Source for Settlement Pool	Initial Support thru Budget
Settlement Frequency	Monthly
Contract Tenure	Medium Tenure (15 yrs)
Auction Design for Selection	Pay-as-Bid
Institutional Structure	Multi-Institutional Architecture

Institutional Architecture for BCS Auction



Step	Relationship	Process
1	MoP → CEA	- Technology Selection - ASP Determination
2	MoP	- Policy Direction - Funding Budget Allocation
	MoP → PFC	Funding Settlement Pool
3	PFC → NVVN/SECI	Clearance for conducting Auctions
4	Generator – NVVN/SECI	Auction Bid & Award
5	NVVN → PFC	Intimation of LOA winners
C	PFC ↔ Generators	- Contract - Executing BCS Contract

Institutional Architecture for BCS Operation



Step	Relationship	Process
C	PFC ↔ Generator	- Contract - Executing BCS Contract
I	Generator → Grid	- I - Injection - Electricity Injection by Generator
D	Grid → Buyer	- D - Drawl - Electricity Drawl by Buyer
Se	Generator → PX	- Se - Sale - Generator sells electricity through PX
Pe	Buyer → PX	- Pe - Purchase - Buyer procures electricity through power exchange
Data	Grid → PFC	Metering & Volume Data via Grid India
P	PFC ↔ Generator	BCS settlement payment

F_1	MoP ↔ PFC	Funds for Settlement Pool
F_2	MoP ↔ Buyer	Buyer Clawback (Option)

Questions?