



Net Zero Market Reform

Markets Forum

NG ESO

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Contents

- 1. Approach to package design**
 - 2. Introduce 'Baseline' packages**
 - 3. Walk-through a 'Build' package**
 - 4. Group discussion (15 minutes)**
 - 5. Playback from the groups (5 minutes)**
- 20 minutes**



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Approach to package design

- 1 Develop sub-criteria (see pg 4)
- 2 Score long-list of options (see pg 5 and 6) against sub-criteria, with Status Quo as the counterfactual
- 3 Combine options to design packages for National, Zonal and Nodal pricing market designs reflecting least change. Results in 3 'baseline' packages
- 4 Build on top of 'baseline' packages to design more ambitious alternatives. Results in 3 'build' packages
- 5 Assess the 3 Baseline packages against each other, using the sub-criteria weighted depending on priorities
- 6 Assess each Build package relative to their corresponding Baseline, using the sub-criteria weighted depending on priorities

Process of combining options to develop a package

Criteria	Sub-criteria	Option 1	Option 2	Option 3	Option 4	...	Option X	Package 1-2-3
Criteria 1	Sub-criteria 1	🟢	🟢	🟡	🟢	...	🟢	🟢
	...	🟡	🟢	🟡	🟡	...	🟢	🟢
	Sub-criteria X	🟢	🟡	🟡	🟡	...	🟡	🟢
...	Sub-criteria 1	🔴	🟢	🟢	🟢	...	🟢	🟢
	...	🟡	🟡	🟡	🟡	...	🟡	🟡
	Sub-criteria X	🟡	🟢	🟡	🟡	...	🟡	🟢
Criteria X	Sub-criteria 1	🟡	🟢	🔴	🟢	...	🟢	🟢
	...	🟡	🔴	🟢	🟡	...	🟢	🟡
	Sub-criteria X	🟢	🟢	🟢	🟢	...	🟢	🟢

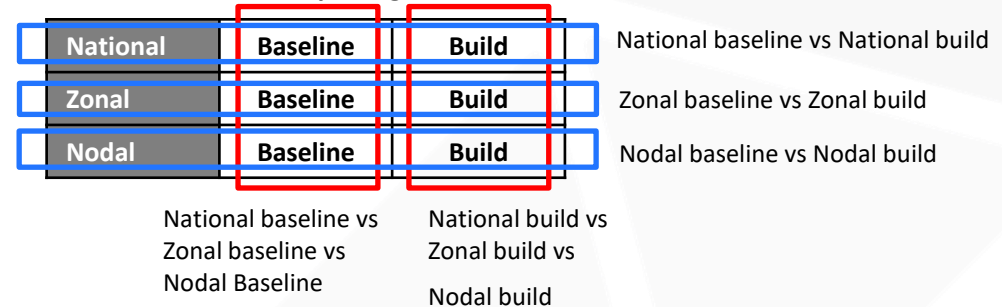
Option 4 incompatible with Option 1 - not combined in example package

Combining options 1, 2 and 3 results in a package that scores consistently better than the options on their own

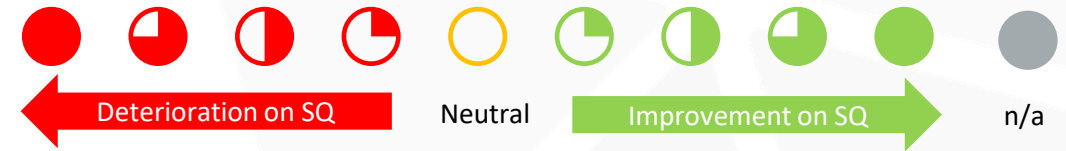
'Baseline' packages
 For a given pricing mechanism (national, zonal or nodal), what is a cohesive set of policies *entailing minimal deviation from the existing policy tool-kit*, which address the key areas in the case for change. Implicit in this is the prioritisation of deliverability.

'Build' packages
 For a given pricing mechanism, what cohesive set of policies would increase the confidence in achieving the REMA objectives (i.e. score more strongly against the assessment criteria) over the longer term.

The 6 packages



Assessment criteria and sub-criteria



Criteria	Sub-criteria
Value for Money	Reduce relative proportion of redispatch
	Improve operational efficiency of interconnectors
	Ensure appropriate risk allocation
	Increase system flexibility
	Reduce inefficient inframarginal rent
Competition	Align markets/avoid distortions
	Better target system costs through market signals
	Promote greater inter-technology competition
	Promote greater market transparency
	Reduce barriers to entry
	Avoid risk of gaming or exploitation of market power
Deliverability	Minimise complexity/interdependencies
	Minimise market disruption
	Minimise implementation cost
	Reduce risk of unproven solutions
	Expedite implementation
Investor Confidence	Respect existing legal framework and rights
	Provide assurance for debt holders
	Provide suitable incentives for equity
	Promote market liquidity
	Minimise ongoing regulatory risk

Criteria	Sub-criteria
Full chain flexibility	Optimise investment in flexibility
	Optimise dispatch of flexibility
	Manage large and extended mismatches between supply and demand
	Promote demand side participation
Whole system	Align investment incentives for cross-vector assets
	Align dispatch incentives for cross-vector assets
Adaptability	Embrace new and evolving business models
	Reduce risk of lock-in or asset stranding
	Adapt to changing technology trends
Consumer fairness	Limit adverse distributional impacts for consumers
	Allow greater consumer choice
	Ensure fair allocation of costs, based on cost-reflectivity
Energy security and system operability	Ensure sufficient capacity to meet peak demand
	Ensure sufficient available energy to manage extended low renewable output
	Ensure sufficient capacity to maintain system operability
	Manage external shocks and unintended consequences
Decarbonisation	Increase probability of achieving decarbonisation objective

List of options considered under baseline and build packages

System dimension	Policy option	Considered for 'Baseline'			Rationale	Considered for 'Build'			Rationale
		National	Zonal	Nodal		National	Zonal	Nodal	
Mass Low Carbon	Evolved CfD	✗	✓	✓	Changes required to accommodate zonal/nodal pricing	✗	✗	✗	Would be insufficient to remove market distortions as volumes of CfDs increase
	CfD with deemed output	✗	✗	✗	Significant change	✓	✓	✓	Would remove dispatch distortions
	CfD with more price exposure	✗	✗	✗	Significant change	✓	✓	✓	Would provide stronger indication of the value of electricity at different times and locations
	Revenue cap and floor	✗	✗	✗	Significant change	✓	✓	✓	Would reduce dispatch distortions
	Bilateral CfD/opt out	✗	✗	✗	Significant change	✓	✓	✓	Would allow greater role of market in determining generation mix
	Supplier Obligation	✗	✗	✗	Incompatible with coordinated delivery of large scale infrastructure	✗	✗	✗	As for Baseline
Capacity Adequacy	Evolved CM	✓	✓	✓	Changes required to promote low carbon flex	✓	✓	✓	As for Baseline
	Optimised CM	✗	✗	✗	Significant change	✓	✓	✓	Include combination of flex, carbon and locational dimensions in auction algorithm to strengthen market signals
	Centralised Reliability Option	✗	✗	✗	Significant change	✓	✓	✓	As above, but replacing with financial option that aligns better with centralised dispatch
	Reverse Reliability Option	✗	✗	✗	New mechanism	✓	✓	✓	Create stronger investment signals for long duration storage/demand turn up to reduce curtailment risk
	Strategic Reserve	✗/✓	✗/✓	✗/✓	Option to bolster security of supply	✗/✓	✗/✓	✗/✓	Option to bolster security of supply

New option

New option

List of options considered under baseline and build packages

System dimension	Policy option	Considered for 'Baseline'			Rationale	Considered for 'Build'			Rationale
		National	Zonal	Nodal		National	Zonal	Nodal	
Dispatch	Centralised dispatch	✗	✗	✓	Pre-requisite for nodal pricing	✓	✓	✓	Reduces the need for de-dispatch
	Self dispatch	✓	✓	✗	Least change option for national and zonal pricing	✗	✗	✗	Centralised dispatch likely to lead to better efficient operational outcomes
Operability	BAU	✗	✗	✗	Insufficient to promote low carbon flex	✗	✗	✗	As Baseline
	BAU+	✓	✓	✗	Necessary to promote low carbon flex	✗	✗	✗	Assumed co-optimisation with centralised dispatch
	Co-optimisation	✗	✗	✓	Integral to nodal pricing/centralised dispatch	✓	✓	✓	As Baseline
	Local markets	✓	✓	✓	Important for optimising flex locationally. Extension of hybrid DSO-ESO coordination model	✓	✓	✓	Rationale as for Baseline. Co-optimisation model.
Other	Split Wholesale Market	✗	✗	✗	Assuming gas/electricity price de-coupling can be achieved more easily through expansion of CfDs	✗	✗	✗	As Baseline
	Carbon intensity reporting	✗	✗	✗	Improving carbon disclosure	✓	✓	✓	Could be used in conjunction with CfD opt out to ensure large consumers are meeting required decarbonization trajectory
	PTR/FTR	✗	✓	✓	Necessary for managing locational basis risk/grandfathering existing rights	✗	✓	✓	As Baseline
	Shorter settlement period	✗	✗	✓	Integral to nodal pricing/centralised dispatch	✓	✓	✓	Implementable with centralised dispatch
	Scarcity adder	✗	✗	✗	Significant change	✓	✓	✓	In conjunction with wholesale price cap, could help limit market power under locational pricing whilst maintaining strong dispatch signal

New options

Baseline packages

3 of the 6 packages are the 'Baseline' packages shown below, which represent minimal deviation from the existing policy option tool-kit. The national baseline is closest to the existing system.

National Baseline

National pricing

Self dispatch

'Evolved CfD'

'Evolved CM' i.e. Existing CM with refinements e.g. locational de-rating factors

Other policies

Tighter EPS

Sharper TNUoS signal

Zonal Baseline

Zonal pricing

Self dispatch

'Evolved CfD' – CfD with national system Market Reference Price

Existing CM

Other policies

Tighter EPS

PTRs

Nodal Baseline

Nodal pricing

Centralised dispatch

'Evolved CfD' - CfD with national system Market Reference Price

Existing CM

Other policies

Tighter EPS

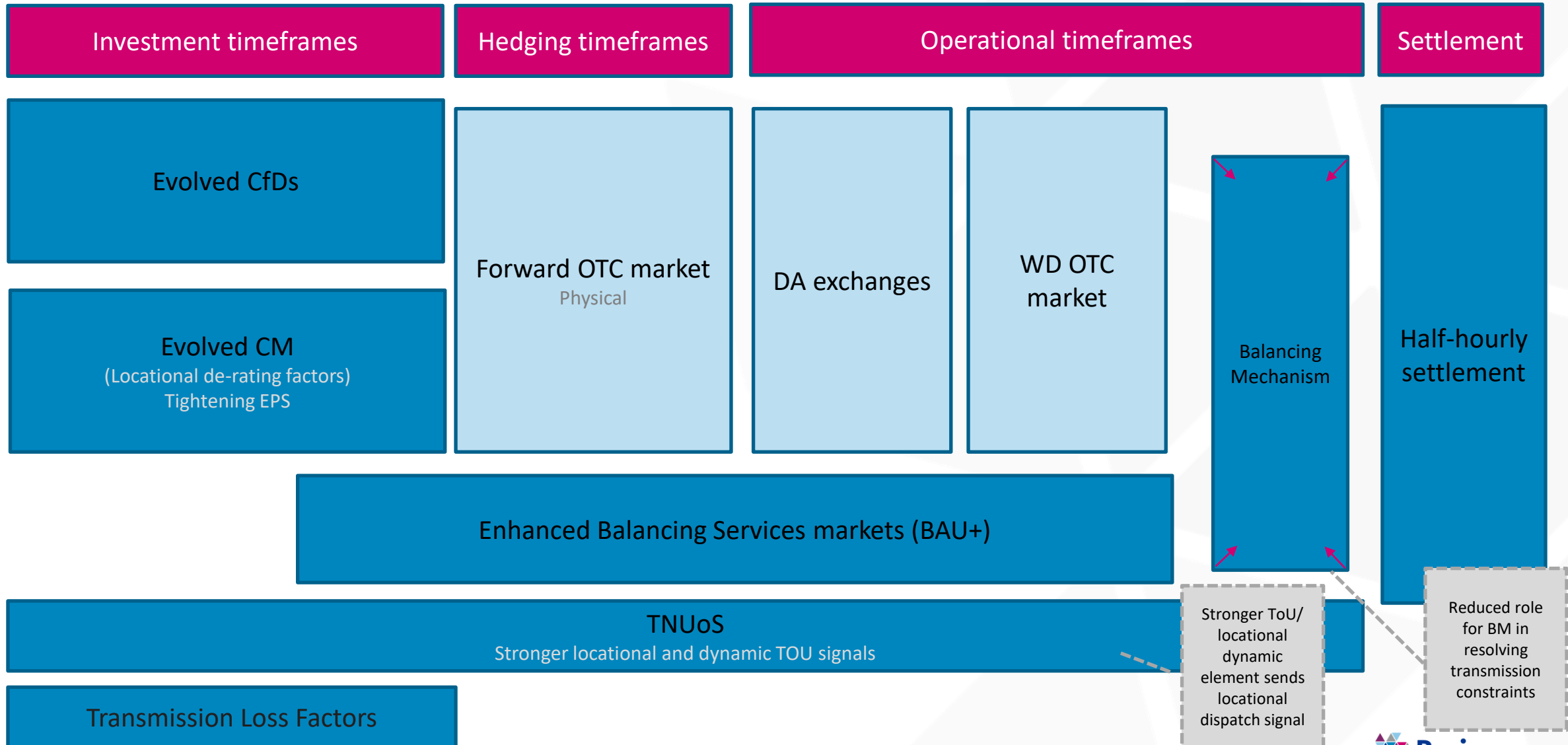
FTRs

5 minute settlement period

Differences with existing arrangements shown in red

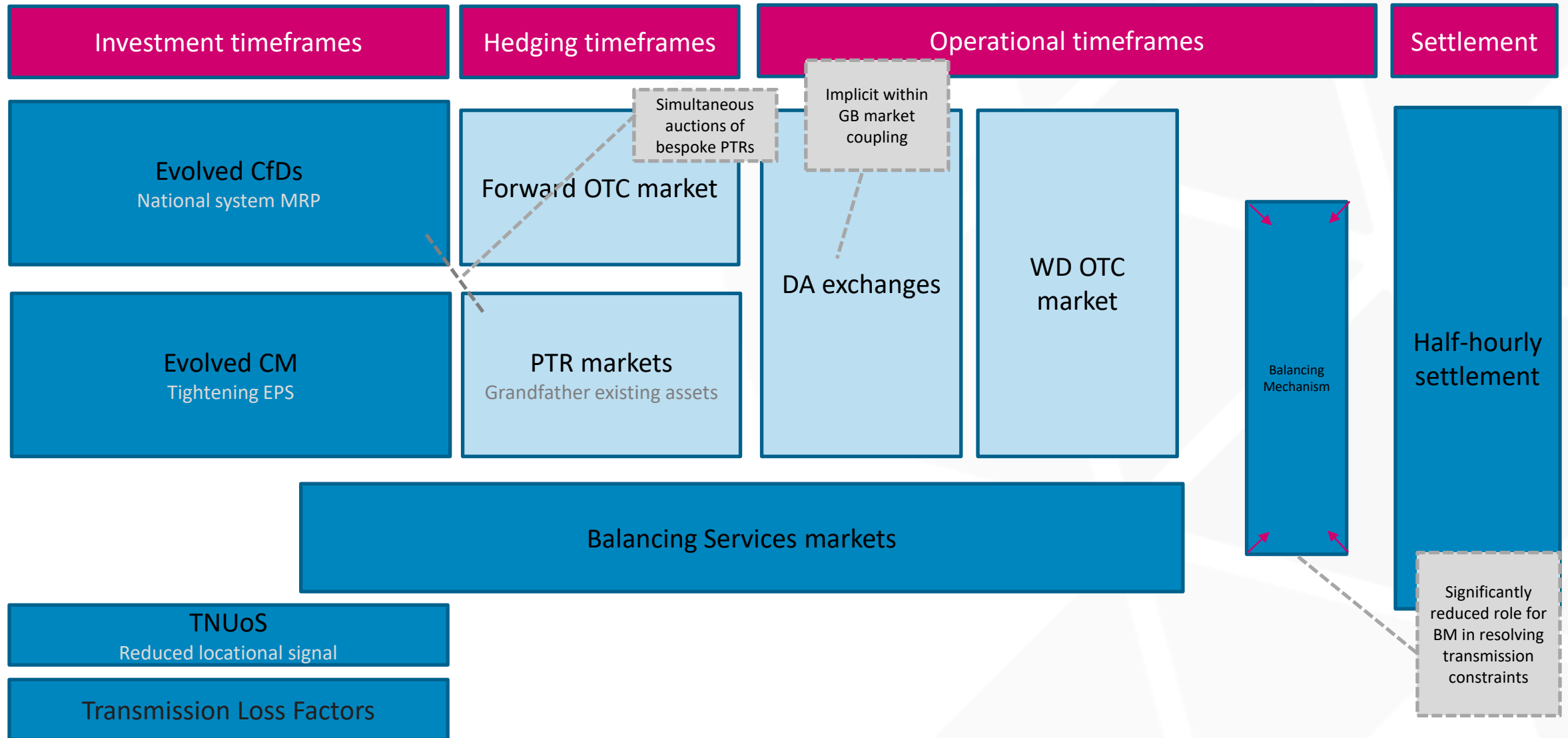
National Pricing – Baseline

Evolution of CfDs and CM, with stronger TOU locational signal through TNUoS reform



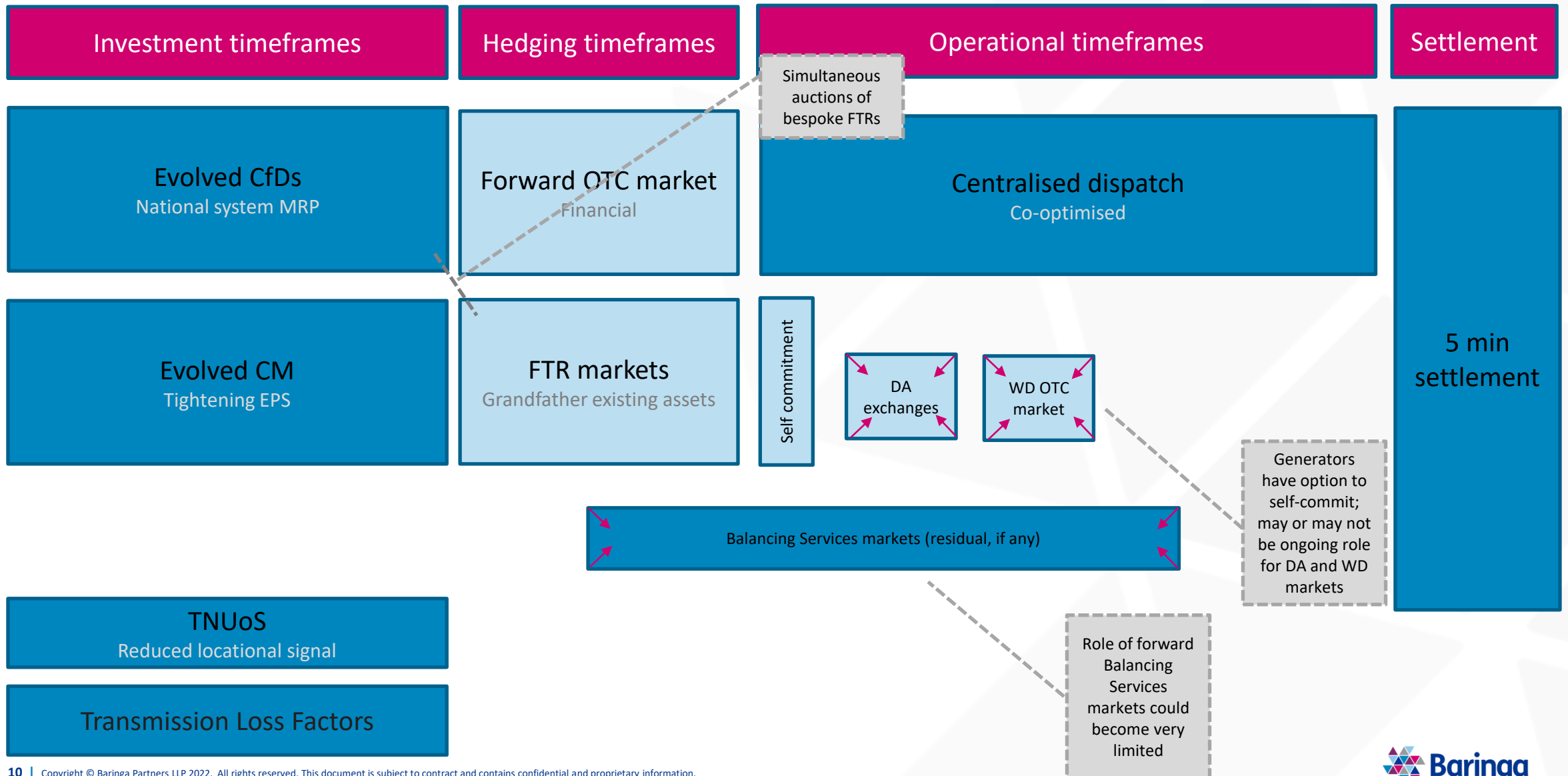
Zonal Pricing – Baseline

Wholesale market split into 10-12 zones; self-dispatch retained; evolution of CfD/CM for zonal pricing



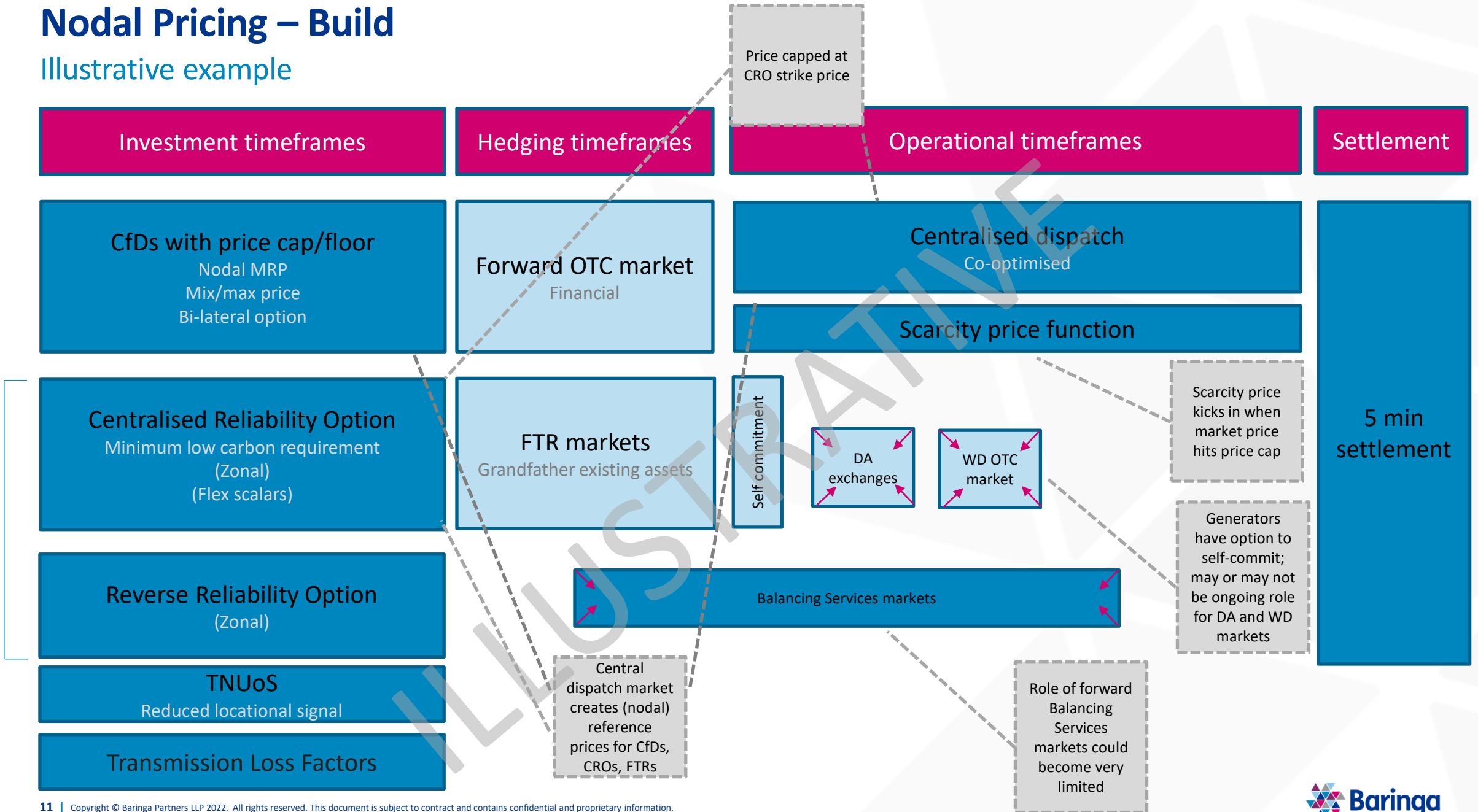
Nodal Pricing - Baseline

Nodal pricing with centralised dispatch; evolution of CfD/CM to accommodate nodal pricing



Nodal Pricing – Build

Illustrative example



Feedback

- 1. Do you agree with the approach we are using to design packages?**
- 2. Do you agree with the options included in our baseline packages?**
- 3. Do you agree with the options considered in our build packages?**