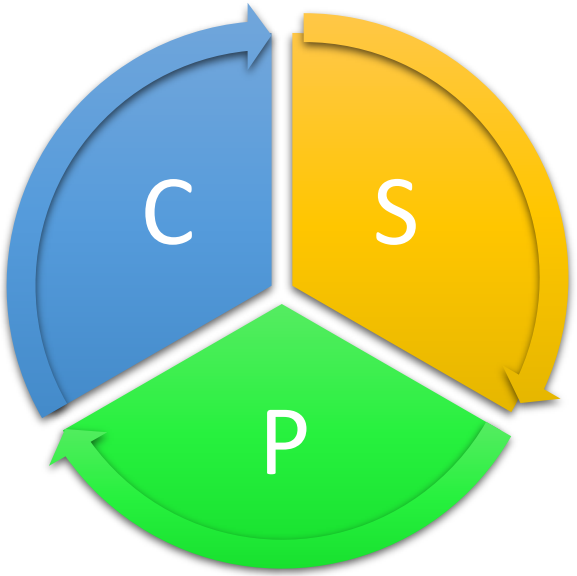


COALITION STAKEHOLDER PACKAGE

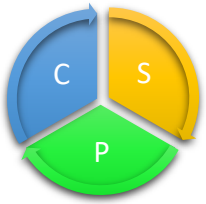
PJM IPRTF Solution

October 7, 2021

Executive Summary

Transitional Serial (TC) & Transitional Cluster (TC) was developed to:

- Provide “transitional equity”:
  - Allow Interconnection Customers (ICs) the opportunity to choose between serial network funding or cluster network funding.
  - ICs with no network upgrades or for those pre-SIS projects - acceptable anticipated standalone NUs per current serial study methodology won’t be forced into a cluster where they may have to fund network upgrades caused by later queued projects.
- Enrollment in TC & TS is closed to non-members of those original queue groups and each project has only one choice.



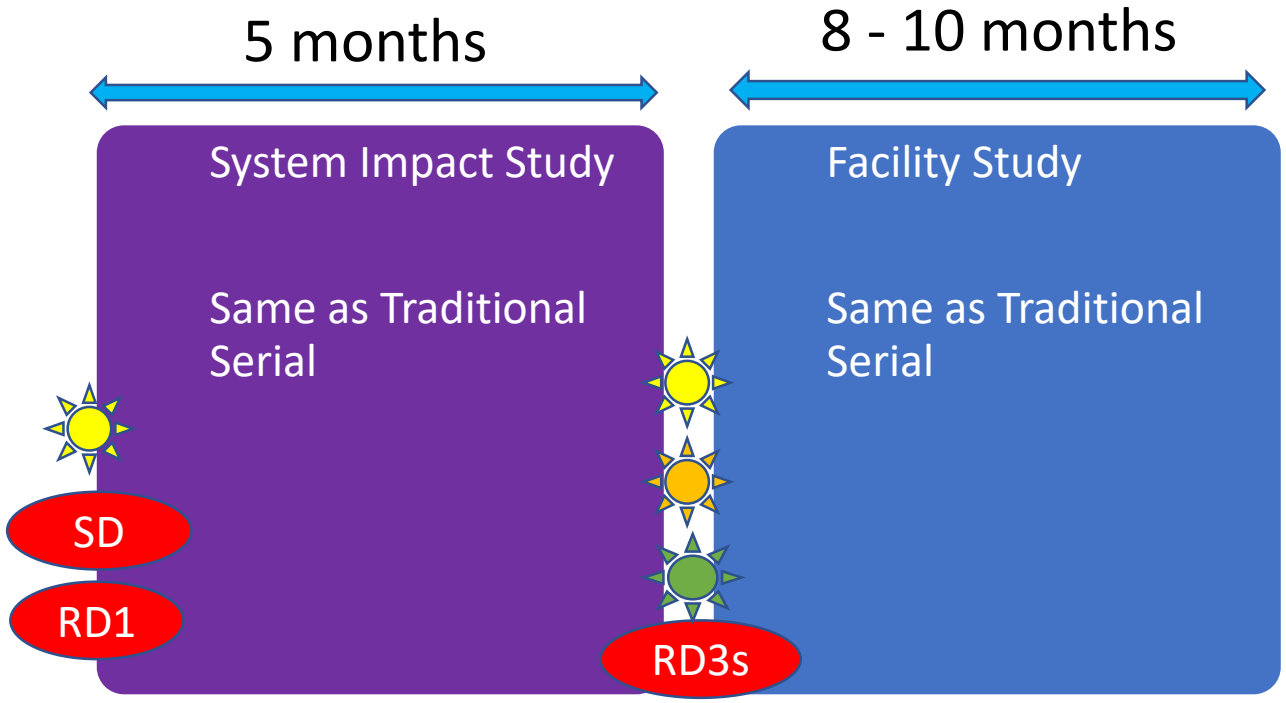
Transitional Serial (TS)

- Transitional Serial is built on the rules of the current process (Traditional Serial) with certain new "readiness" requirements that are like those in the Cluster Process.
  - Study Deposit
  - Readiness Deposits
  - Site Control Requirements
  - Affected System performance at decision points (if applicable)
- Feasibility Study phase is eliminated
- Suspension of milestone dates limited to one year.
- The above at-risk deposit structure, site control requirements, and reduced study phase, will likely cause immature projects to withdraw or projects in congested area to opt for Transitional Cluster (TC) process.

Transitional Serial (TS)

- Transitional Serial cycles are completed prior to the Transitional Cluster cycle for the same queue group or set of queue groups.
- Transitional Serial is completed prior to start of Phase 3 of subsequent Transitional Cluster
- AE1 – AG1 Transitional Serial
  - Readiness Deposit is $4000/MW
  - Study Deposit
  - Site Control prior to Facility Study/Phase 3 is required
  - Air/Water/Fuel
- AG2 + After Transitional Serial
  - Readiness Deposit is $4000/MW
  - Study Deposit
  - Application Generation Facility Site Control is required
  - Update Queue Point to one POI
- Similar to cluster process, PJM Transitional Serial (TS) model will be available 45 days prior to decision to enter Transitional Serial
- Allow downsizing according to the current PJM rule before entering TS.

Transitional Serial (TS)



ISA/CSA

Same as Traditional Serial except suspension period limited to 1 year and additional milestones if necessary.

SD Study Deposit

RD Readiness Deposit

Evidence of Affected System Performance

Site Control

Air, water, fuel permits

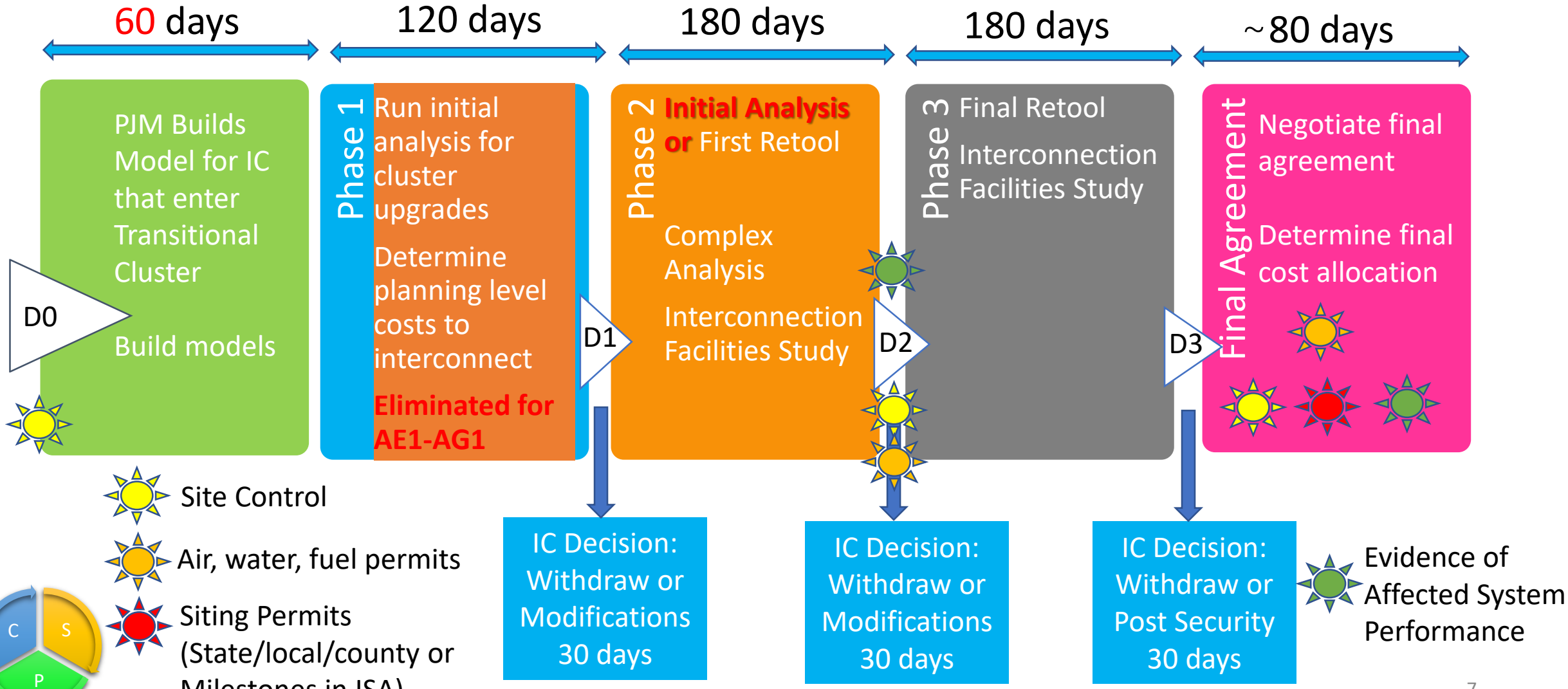
Siting Permits (State/local/county/fuel or Milestones in ISA)

Transitional Cluster (TC)

- Transitional Cluster is built on the rules of the proposed Cluster Process.
- Decision Point 0 (D0) – Enter Transitional Cluster
  - Readiness Deposit is $4000/MW
  - Study Deposit
  - Application Generation Facility Site Control
- AE1 – AG1 Transitional Cluster
  - Phase 1 is eliminated
- AG2 – AH1 Transitional Cluster
  - Update Queue Point to one POI

- PJM Builds Model and provides to ICs for a 30-day due diligence period

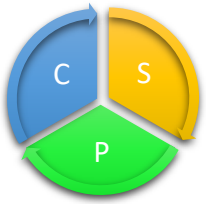
Transitional Cluster (TC) Process



Study Deposits – Transitional Serial & Transitional Cluster Process

- Study Deposit (SD)
  - Covers the study costs
  - Refundable less actual study costs

Project Size	Deposit
0 – 20 MW	$75,000
> 20 – 50 MW	$200,000
> 50 – 100 MW	$250,000
> 100 – 250 MW	$300,000
> 250 – 750 MW	$350,000
> 750 MW	$400,000

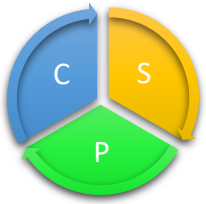


Readiness Deposits – Transitional Serial & Transitional Cluster

- Readiness Deposit (RD)
  - Funds committed based upon study results
  - Not used to fund studies
  - Refunds subject to study phase and adverse test results
  - RDs determined at the time they are due; not to be funded or reduced or reduced based upon later project reductions or cost allocations.
  - Allocated Upgrades = Allocated Network Upgrades (NU)

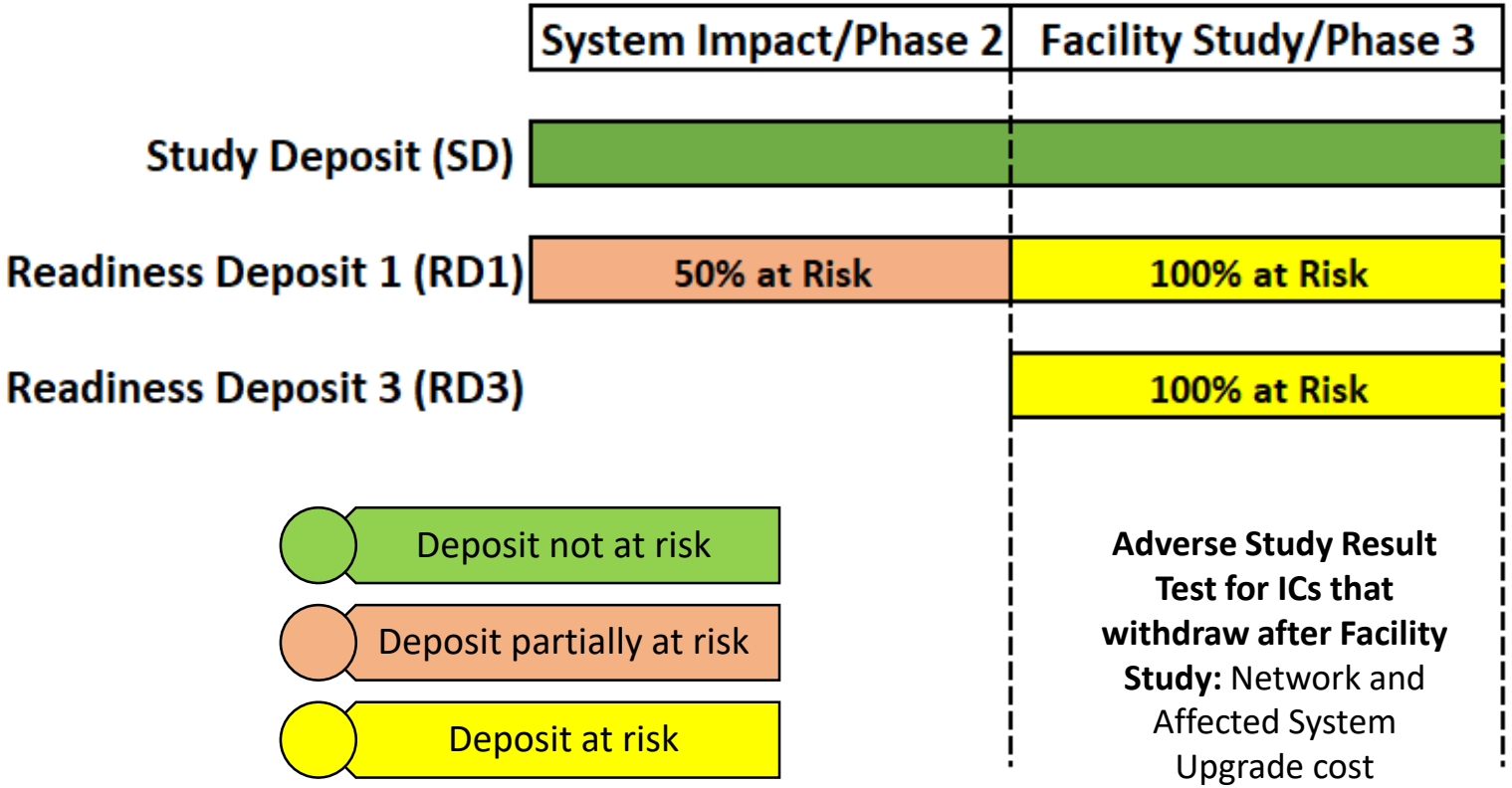
Transitional Serial Process	
Phase	**Readiness Deposit**
System Impact	**RD1 =$4000/MW**
Facility	**RD3s = 20% of Upgrades – RD1***

Transitional Cluster Process	
Phase	**Readiness Deposit**
Application	**RD1 = $4000/MW**
Phase 2	**RD2 = 10% of Allocated Upgrades – RD1****
Phase 3	**RD3 = 20% of Allocated Upgrades – RD2 – RD1 ****



* Upgrade – The Total Upgrade cost for the constraints that were caused or aggravated by the study projects.
** Allocated Upgrade – The total upgrade cost allocation to the cluster projects for the constraints that were caused or aggravated by the study projects.

Transitional Serial – Study and Readiness Deposits at Risk

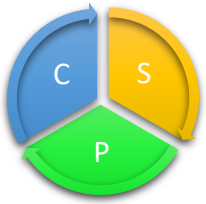


Comparison of Readiness Deposits – Sample A

- In the traditional serial process, a 150 MW project in a non-congested area triggered an overload that requires a $30 million upgrade. Two subsequent projects also contributed to the same upgrade. Each of the three projects contributed the same DFAX to the transmission facility.

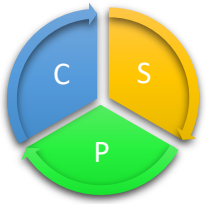
	Traditional Serial	Transitional Serial	Transitional Cluster
Initial Study Deposit1	$25,000 (Month 1-4) $42,500 (Month 5) $60,000 (Month 6)	$300,000	$300,000
System Impact Study1	$75,000		
Facility Study1	$100,000		
Readiness Deposit 1 (RD1)	$0	$600,000	$600,000
Readiness Deposit 2 (RD2)	$0	NA	$1,000,000
Readiness Deposit 3 (RD3) or (RD3s)	$0	$6,000,000	$2,000,000
Total	$200,000 - $235,000	$6,900,000	$3,900,000

Sample A Project is better off choosing Transitional Cluster Process



Would Many Projects Choose Transitional Serial?

- **NO!** Much higher at-risk readiness deposits prevent projects from entering Transitional Serial to take chances.
- Readiness deposit is much higher for projects at congested (crowded) regions in the Transitional Serial Process than in the Transitional Cluster Process.
- First-to-cause interconnection customer provides ***100% of security for entire Network Upgrade*** when ISA is executed. There is no guarantee subsequent interconnection customers would move forward and provide partial reimbursement.
- When one subsequent project signs ISA, ***100% of the security is at risk.***
- Increasing Network Upgrade costs accelerate pushing projects in **RED ZONE** where they would be uncompetitive in the PJM market.
- Consequence of withdrawing is financial loss RD1 deposit and substantial time if project is pushed to next open cluster cycle.



Comparison of Initial Deposits

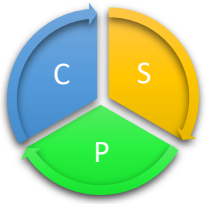
Sample Project: 150 MW, $10,000,000 of Allocated Network Upgrades

	Traditional Serial	Transitional Serial	Transitional Cluster
Initial Study Deposit[1]	$25,000 (Month 1-4) $42,500 (Month 5) $60,000 (Month 6)	$300,000	$300,000
System Impact Study[1]	$75,000		
Facility Study[1]	$100,000		
Readiness Deposit (RD1)[2]	$0	$600,000	$600,000
Total	**$200,000 - $235,000**	**$900,000**	**$900,000**

[1]Unused study deposits are returned.
[2]50% of funds at risk.

HUGE INCREASE FROM TRADITIONAL!!

380% to 450% increase!!!



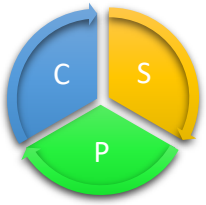
Comparison of Readiness Deposits

Sample Project: 150 MW, $10,000,000 of Allocated Network Upgrades. Network Upgrade is $30,000,000.

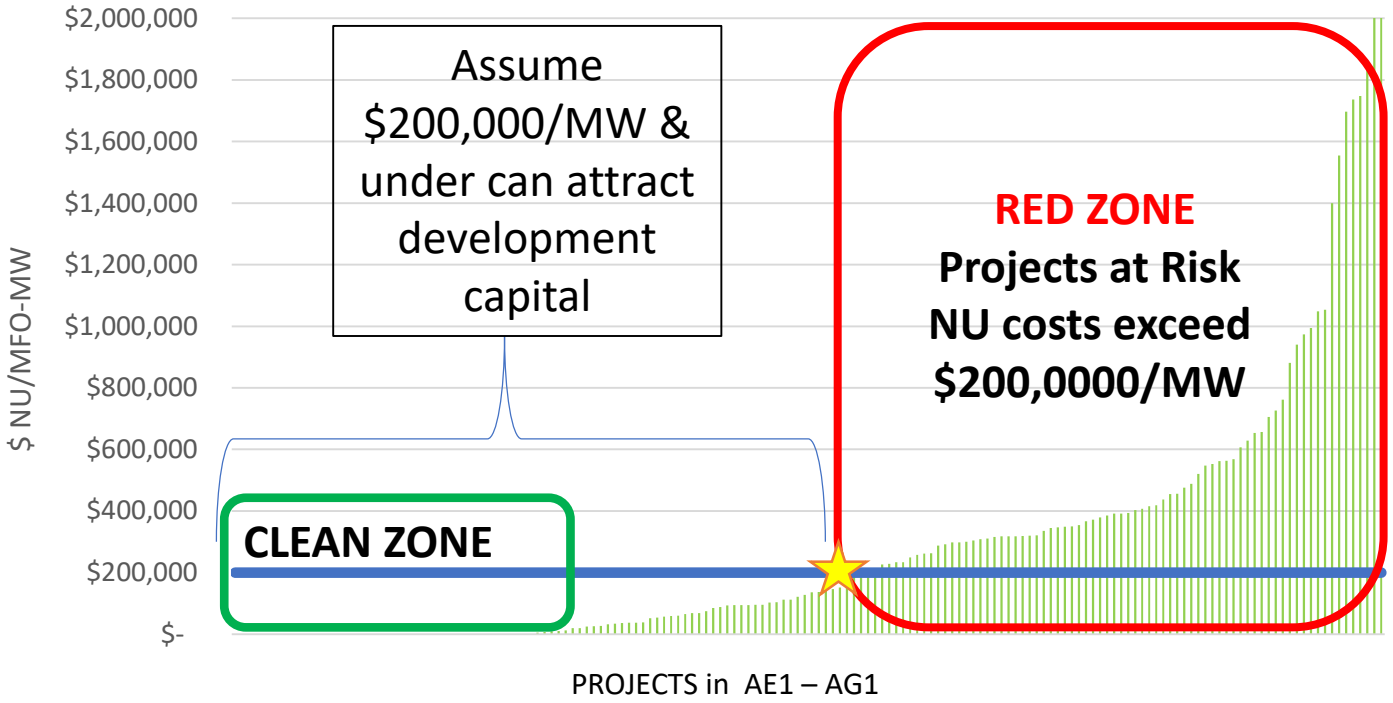
	Traditional	Transitional Serial	Transitional Cluster
Readiness Deposit 2 (RD2)[1]	$0	NA	$1,000,000
Readiness Deposit 3 (RD3)[2]	$0	NA	$2,000,000
Readiness Deposit 3s (RD3s)[3]	$0	$6,000,000	NA

[1]Adverse Test – Allocated Network Upgrade Cost and Allocated Affected System Upgrade Costs increase exceeds 25% and $10,000/MW Increase.
[2]Adverse Test – Allocated Network Upgrade Cost and Allocated Affected System Upgrade Costs increase exceeds 35% and $15,000/MW Increase.
[3]Adverse Test – Network Upgrade Cost and Allocated Affected System Upgrade Costs increase exceeds 35% and $15,000/MW Increase.

Going from no Readiness Deposits up to $2- $6 million.
HUGE NEW FEES!!



Cost of Allocated Network Upgrades in DOM for projects with SIS



Sample Project ★

Size: 150 MW

Interconnection Costs: $9,000,000

Allocated Network Upgrades: $30,000,000

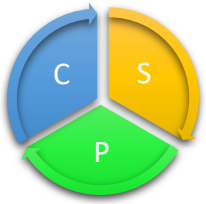
Network Upgrade: $60,000,000

RD1 = $600,000; $300,000 at risk

RD2 = $3,000,000; $3,000,000 at risk

RD3s = $12,000,000 = (.2)*($60,000,000); $12,000,000 at risk

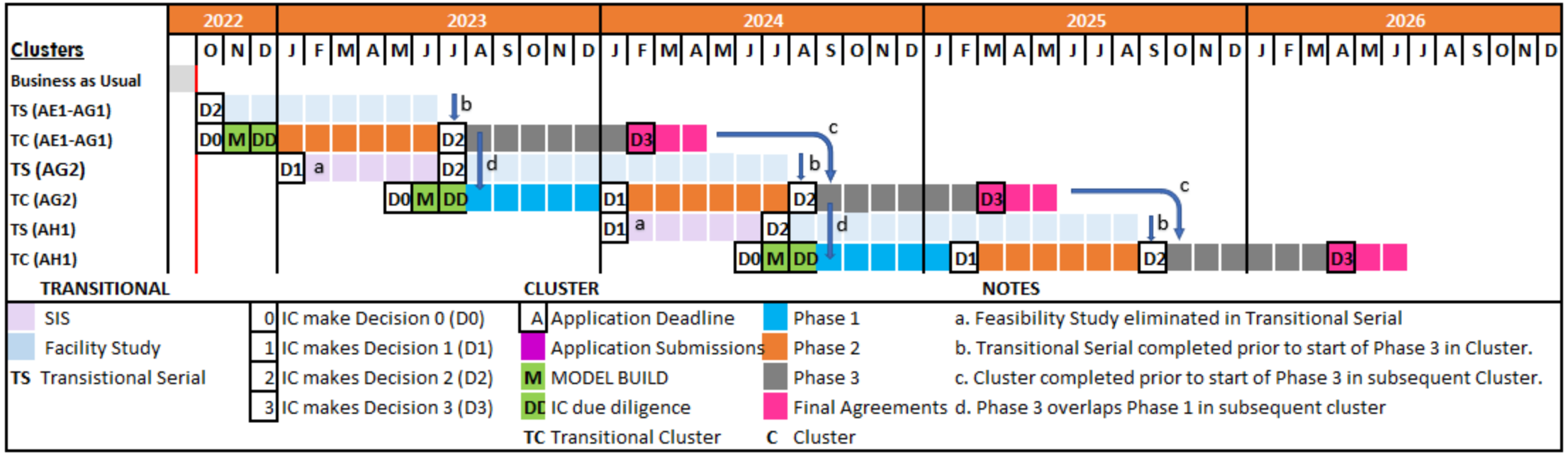
Number of Projects	Estimate of choices ICs will make
43 (26%) in Clean Zone	Most likely to get through Traditional Process
48 (30%) in middle	Most likely to choose Transitional Serial
74 (44%) in Red Zone	Most likely to choose Transitional Cluster or Withdraw



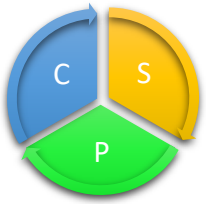
Transitional Serial & Transitional Cluster

1. All ICs in the AD2 cluster or before remain in the Traditional Serial process.
2. All ICs in the AE1 – AH1 queue can *only* choose 1) Transitional Serial or 2) Transitional Cluster Process.
3. ICs that don't meet the new deposit and site control requirements are withdrawn.

Transition Schedule



Study Deposits and Readiness Deposits are due at end of the Decision Points.

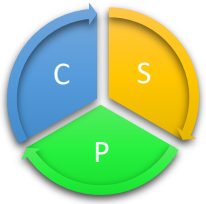


Queue Priority

- Prior to FERC Approval – Business as Usual

1. AD2 & Before
2. Projects from AE2 – AG1

- After FERC Approval
    1. AE1 - AG1 in Transitional Serial
    2. AE1 - AG1 in Transitional Cluster
    3. AG2 in Transitional Serial
    4. AG2 in Transitional Cluster
    5. AH1 in Transitional Serial
    6. AH1 in Transitional Cluster

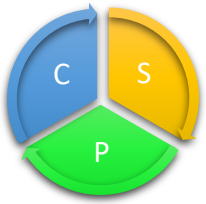


Transitional Deposits

Cluster	D0	D1	D2
TS (AE1-AG1)			SD + RD1
TC (AE1-AG1)	SD + RD1		RD3
TS (AG2)		SD + RD1	RD3s
TC (AG2)	SD + RD1	RD2	RD3
TS (AH1)		SD + RD1	RD3s
TC (AH1)	SD + RD1	RD2	RD3

Other Terms – For Serial and Cluster

- ❑ One year Suspension Period
  - Transitional Serial, Transitional Cluster, Cluster
- ❑ Inter-Cluster Funding Network Upgrades – 5 Year
  - Transitional Serial - $5 M or more (no change)
  - Transitional Cluster, Cluster – $25 M or more
- ❑ Site Control
  - Move DP1 requirements to DP2



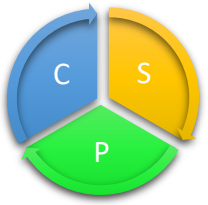
Contact Information

Lesley Williams
Senior Vice President
Geenex Solar LLC
Lesley.Williams@geenexsolar.com

Georg Veit
CEO
Geenex Solar LLC
Georg.Veit@geenexsolar.com

Donna Robichaud
Senior Vice President
Geenex Solar LLC
Donna.Robichaud@geenexsolar.com

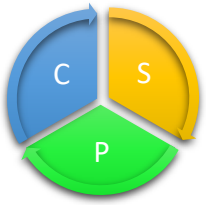
Ken Foladare
Director, RTO and Regulatory Affairs
Tangibl Group, Inc.
Ken.Foladare@tangiblinc.com



Contact Information

Jay Carlis
Executive Vice President
Community Energy Solar
Jay.Carlis@CommunityEnergyInc.com

Walter Crenshaw
Development Director
Community Energy Solar
Walter.Crenshaw@CommunityEnergyInc.com



Clearway Energy Contact Information

- Ling Hua
- Senior Manager Grid Integration
- Ling.hua@clearwayenergy.com

- Chris Barker
- Senior Director Transmission and Grid Integration
- Chris.Barker@clearwayenergy.com

CC:

John Woody, Head of Development, john.woody@clearwayenergy.com

Hannah Muller, Head of Market and Policy, Hannah.muller@clearwayenergy.com

Nick Benjamin, Director of Development, nick.benjamin@clearwayenergy.com

Dan Keyes, Senior Manager Business Development dan.keyes@clearwayenergy.com