



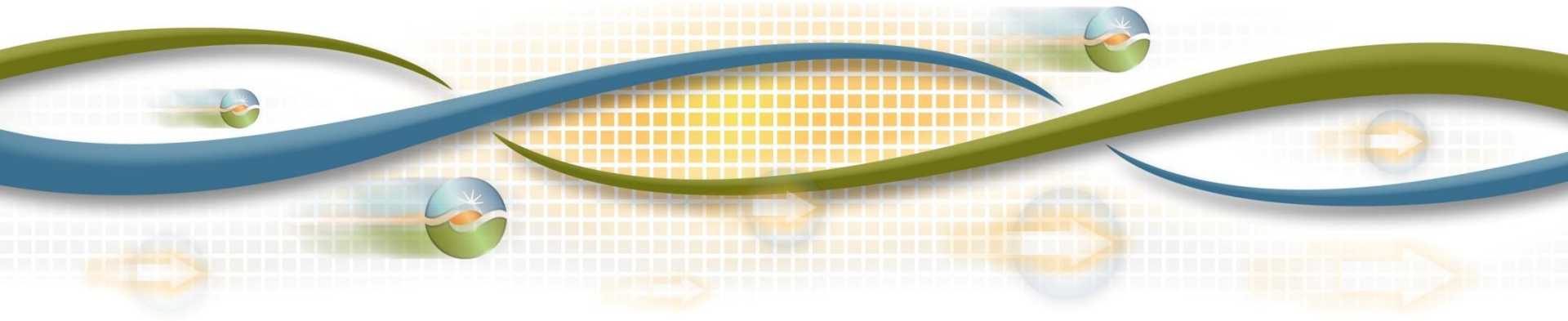
California ISO
Shaping a Renewed Future

Flexible Resource Adequacy and Must Offer Obligation (FRAC MOO) Pre-Market Sim Training

Cynthia Hinman

Lead Client Trainer

August 19, 2014

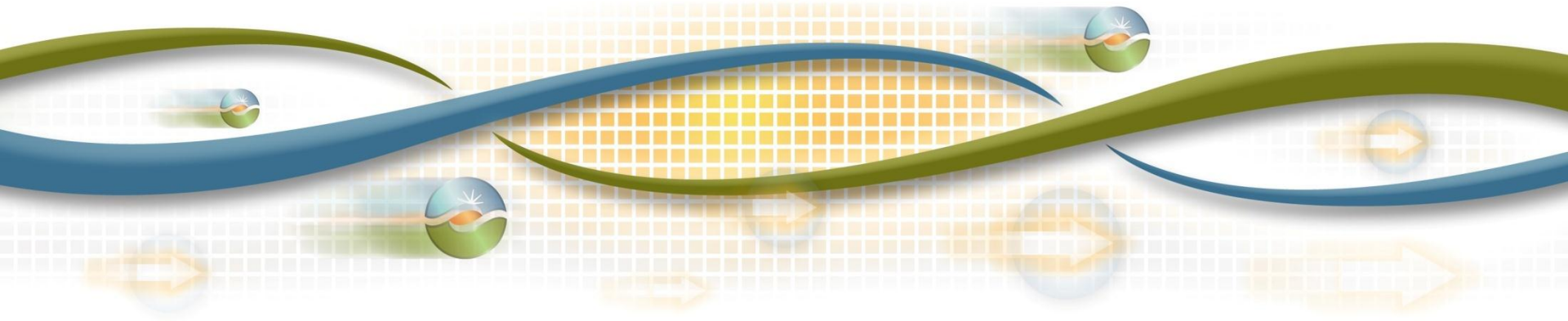


Agenda

Introduction	<ul style="list-style-type: none">• Background• Milestones
Changes to templates	<ul style="list-style-type: none">• RA plan• Supply plan
Changes to CIRA	<ul style="list-style-type: none">• Timeline• Validation Logic• Deficiency Analysis
Capacity Procurement Mechanism (CPM)	<ul style="list-style-type: none">• Backstop• Allocation

Introduction

Why are we doing this? What is flexible capacity?



What is “flexible capacity” and why is it important?

- Addresses the challenge of added variability and uncertainty of variable energy resources
- ISO, CPUC and other local regulatory authorities worked together to develop a plan to meet these challenges
 - CPUC established a flexible capacity procurement obligation for LSEs
 - ISO is implementing the FRAC MOO initiative

Effective Flexible Capacity (EFC) – The maximum MW of flexible capacity a resource has the capability to provide based on the ISO’s counting criteria.

RA resource comparison

Generic RA requirement

- Resources may economically bid or self-schedule to fulfill their RA obligation
- Substitution for forced outages
- Replacement for planned outages

Flexible RA requirement

- Resources must economically bid to fulfill their obligation
- No substitution required for forced outages
- No replacement required for planned outages

Needs-based must offer categories – Category 1, base ramping

Economic Bid – Must offer obligation	• 5:00 am – 10:00 pm
Energy Requirement	• Minimum 6 hours at EFC
Daily Availability	• 7 days/week
Minimum quantity of capacity allowed	• Set monthly based on largest secondary net load ramp
Daily start-up capability	• Minimum of 2 starts per day or the # of starts allowed by operational limits as determined by min up and down time
Other limitations	• No limitations that translate to less than the daily requirements
Examples of types of resources	• Conventional gas fired resources, wind, hydro, storage with long discharge capabilities

Needs-based must offer categories – Category 2, peak ramping

Economic Bid – Must offer obligation	<ul style="list-style-type: none">• 5 hour block (determined seasonally)
Energy Requirement	<ul style="list-style-type: none">• Minimum 3 hours at EFC
Daily Availability	<ul style="list-style-type: none">• 7 days/week
Maximum quantity of capacity allowed	<ul style="list-style-type: none">• Set based on the difference between 100% of the requirement and category 1
Daily start-up capability	<ul style="list-style-type: none">• At least 1 start per day
Other limitations	<ul style="list-style-type: none">• No limitations that translate to less than the daily requirements
Examples of types of resources	<ul style="list-style-type: none">• Use-limited conventional gas fired generation, solar, conventional gas fired peaking resources

Needs-based must offer categories – Category 3, super-peak ramping

Economic Bid – Must offer obligation	<ul style="list-style-type: none">• 5 hour block (determined seasonally)
Energy Requirement	<ul style="list-style-type: none">• Minimum 3 hours at EFC
Daily Availability	<ul style="list-style-type: none">• Non-holiday weekdays
Maximum quantity of capacity allowed	<ul style="list-style-type: none">• Maximum of 5% per month of the total requirement per month
Daily start-up capability	<ul style="list-style-type: none">• At least 1 start per day
Other limitations	<ul style="list-style-type: none">• Must be capable of responding to at least 5 dispatches per month
Examples of types of resources	<ul style="list-style-type: none">• Short discharge battery resource providing regulation and demand response resources

Needs-based must offer categories

Parameter	Category 1 (Base Ramping)	Category 2 (Peak Ramping)	Category 3 (Super-Peak Ramping)
Economic Bid Must-Offer Obligation	5:00 a.m. – 10:00 p.m.	5 hour block (determined seasonally)	5 hour block (determined seasonally)
Energy Requirement	Minimum 6 hours at EFC	Minimum 3 hours at EFC	Minimum 3 hours at EFC
Daily Availability	7 days/week	7 days/week	Non-holiday weekdays
Maximum or Minimum Quantity of Capacity Allowed in Category	Minimum requirement set monthly based on largest secondary net load ramp	Maximum set based on difference between the 100% of the requirement and category 1	Maximum of 5% per month of the total requirement per month

Needs-based must offer categories (cont'd)

Parameter	Category 1 (Base Ramping)	Category 2 (Peak Ramping)	Category 3 (Super-Peak Ramping)
Daily Start-Up Capability	The minimum of two starts per day or the number of starts allowed by operational limits as determined by minimum up and down time	At least one start per day	At least one start per day
Other Limitations	No monthly or annual limitations on number of starts or energy limits that translate to less than the daily requirements	No monthly or annual limitations on number of starts or energy limits that translate to less than the daily requirements	Must be capable of responding to at least 5 dispatches per month
Examples of resource Types that Could Qualify for Category	Conventional gas fired resources, wind resources hydro resources, and storage resources with long discharge capabilities	Use-limited conventional gas fired resources, solar resources and conventional gas fired peaking resources	Short discharge battery resources providing regulation and demand response resources

Six elements of the FRAC-MOO initiative

- Requirement determination
 - Assess the flexibility needs
- Allocation methodology
 - Based on each LSE's contribution
- ➔• Flexible capacity RA showing
 - Demonstrate annually/monthly adequate procurement
- ➔• Showing assessment and resource counting
 - Compare flexibility need to RA showing
- Must offer obligation
 - Submit economic energy bids
- ➔• Backstop procurement
 - One year forward procurement based on cumulative deficiencies

Key dates for this initiative

August 25,
2014

- Market Simulation

November
6, 2014

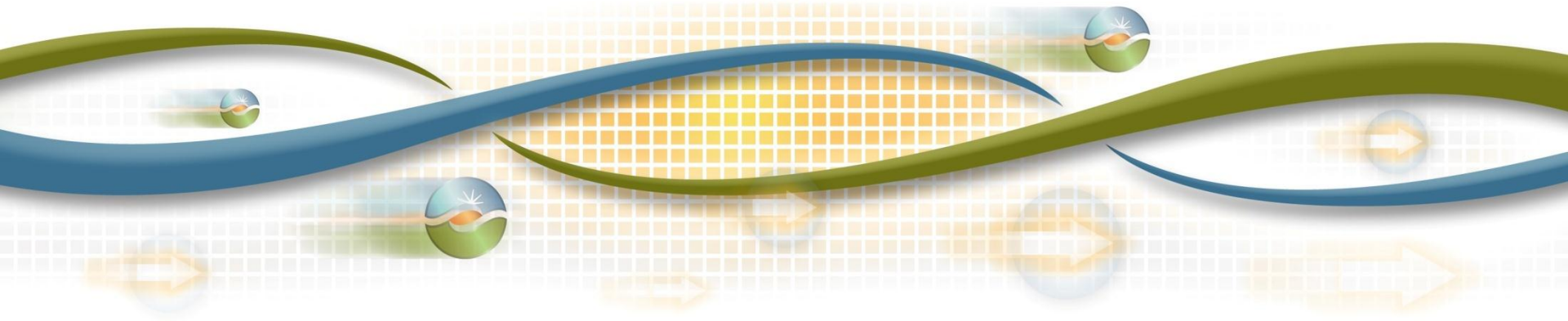
- Go live

January 1,
2015

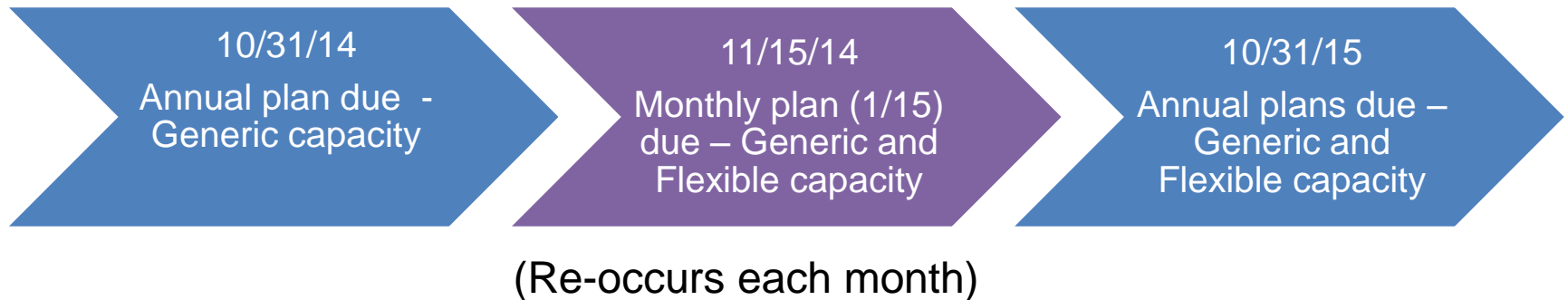
- Settlements

Template Changes

RA plan and Supply plan templates



Annual and monthly milestones



New Tab – RA Plan Template

	B	C	D	E	F	G
1						
2	Resource Capacity Contract Number	Resource ID in CAISO Master File	Flex RA Capacity (MW 00.00 No Rounding)	Effective Start Date (mm/dd/yyyy hh:mm:ss)	Effective End Date (mm/dd/yyyy hh:mm:ss)	Flexible Category (1, 2, or 3)
3	caiso 123468ghyui	CAISO_1233	23.30	1/1/2014 0:00:00	1/31/2014 23:59:59	1
4						
5						
6						
7						
8						

Admin Info Resources Other **Flexible RA Capacity** PRM For Annual RA

Notes

- All of the fields are required and must be completed (except if the participant does not have any flexible capacity procured for the trade month).
- Contract # must be the same as contract # used by the supplier
- Resource ID must be the same as the master file
- Flex RA Capacity amount should not be rounded
- Effective start date = first day of the month
- Effective end date = the last day of the month
- Flexible category = 1, 2 or 3 - see slide 5 for additional information

New Tab – Supply Plan Template

	A	B	C	D	E	F	G	H
1								
2	Annual	Resource Capacity Contract Number	Resource ID in CAISO Master File	Flexible RA Capacity (MW 00.00 No Rounding)	RA Capacity Effective Start Date (mm/dd/yyyy hh:mm:ss)			
3		CAISO_1234	RES_1	12.45				
4								
5								
6								
7								

	F	G	H
	RA Capacity Effective End Date (mm/dd/yyyy hh:mm:ss)	Flexible Category (1, 2, or 3)	SCID of Load Serving Entity
			ABCD

Notes

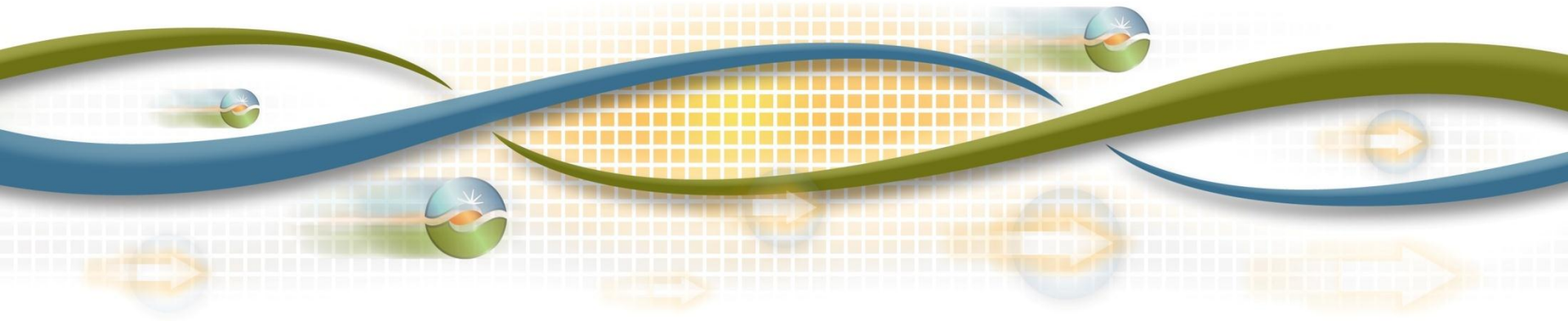
- All of the fields are required and must be completed
- Contract # must be the same as contract # used by the LSE on the RA plan
- Resource ID must be the same as the master file
- Flex RA Capacity amount should not be rounded
- Effective start date = first day of the month
- Effective end date = the last day of the month
- Flexible category = 1, 2 or 3 - see slide 5 for additional information
- SCID of LSE



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CIRA changes

Overview

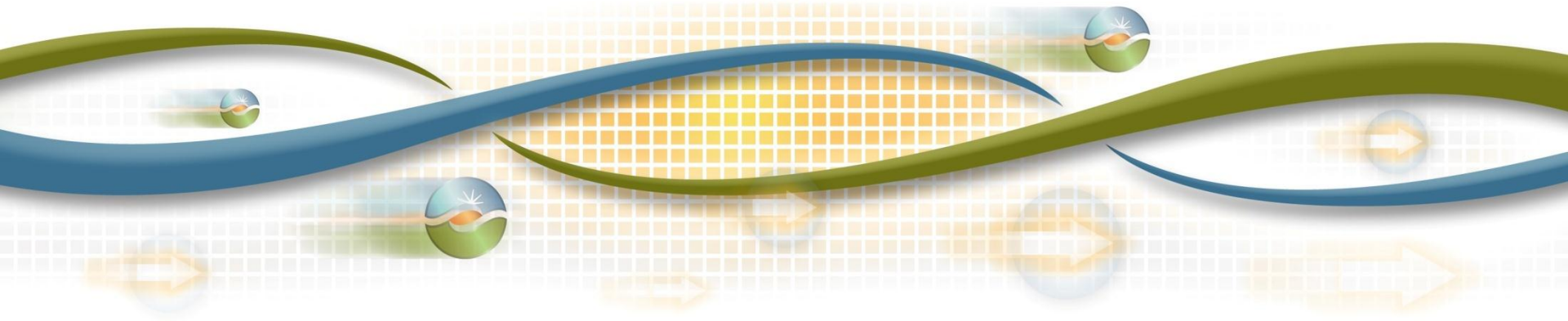


CIRA is accessed through the market participant portal (MPP)

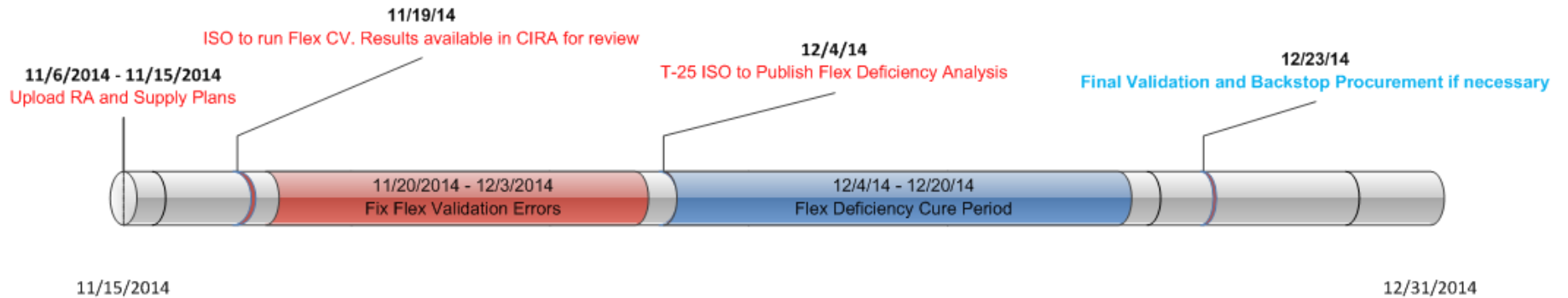
New users must submit an AARF to gain access

CIRA changes

Timeline



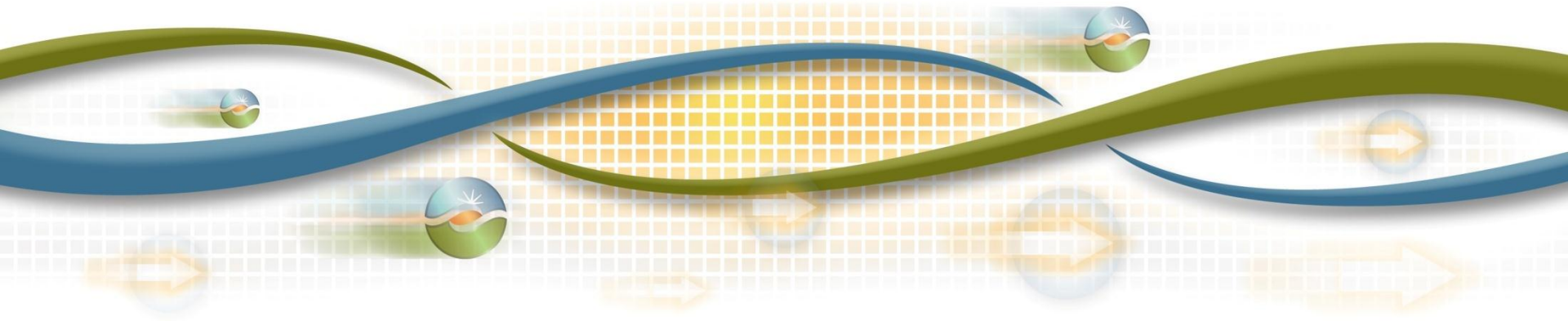
**FRACMOO Validation Timeline
for January 2015 RA
Compliance month**



The submission RA timeline has not changed.

CIRA changes

Validation Logic



Errors on upload of RA Plan & Supply Plan

- Existing rules will apply to the upload of Flexible RA Capacity information
- A new rule has been added

❗ The category in Flexible RA Capacity is lower than the minimum defined category for this resource (Cell G3)
❗ The category in Flexible RA Capacity is lower than the minimum defined category for this resource (Cell G4)

Flexible capacity validation error rules

- Rules for flexible capacity validation

Category on EFC list	May be used as:
1	1, 2, 3
2	2, 3
3	3

- Example - Resource A is a solar resource
 - EFC list – identified as a category 2 resource
 - Supply plan – designated as a category 1 resource
 - Upload error will occur

Cross Validation Supply Details

Submittal Type	M	Plan Month	06	Plan Year	2014
Run Num	1242	Plans Effective as of	07/03/2014 09:39:21	Run Comments	
SCID	-Select-	Resource ID	<input type="text"/>		
Detail Type	<div style="border: 1px solid black; padding: 2px;"> Flex Supply Plans Flex Supply Plans Flex RA Plans Flex Plans Combined </div>				

View	Reset
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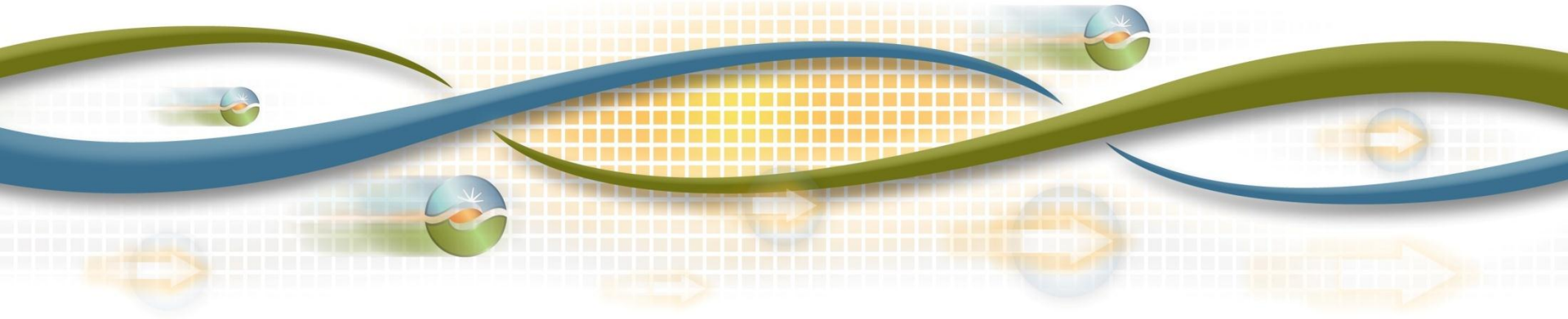
Validation Status	SCID	Contract Number	Resource ID	RA Capacity (MW)	Effective Start Date	Effective End Date	SCID of LSE	Comments
Warning	<input type="text"/>	<input type="text"/>	<input type="text"/>	50	06/01/2014 00:00:00	06/30/2014 23:59:59	<input type="text"/>	LSE claiming less 1 Flexible Capacity on RESOURCE_ID <input type="text"/>
Warning	<input type="text"/>	<input type="text"/>	<input type="text"/>	10	06/01/2014 00:00:00	06/30/2014 23:59:59	<input type="text"/>	LSE claiming less 1 Flexible Capacity on RESOURCE_ID <input type="text"/>
Passed	<input type="text"/>	<input type="text"/>	<input type="text"/>	30	06/01/2014 00:00:00	06/30/2014 23:59:59	<input type="text"/>	
Passed	<input type="text"/>	<input type="text"/>	<input type="text"/>	20	06/01/2014 00:00:00	06/30/2014 23:59:59	<input type="text"/>	
Passed	<input type="text"/>	<input type="text"/>	<input type="text"/>	40	06/01/2014 00:00:00	06/30/2014 23:59:59	<input type="text"/>	

Cancel

Download Screen Results

CIRA changes

Deficiency Analysis



Deficiency Analysis

Flex Analysis Results

Select :

Entity	Type	Obligation	Showings	Qualified Showings	Deficiency	Assessment
LSEQ	Category 1 (min)	500	0	0	-500	Short
LSEQ	Category 2 (max)	150	0	0		
LSEQ	Category 3 (max)	150	0	0		
LSEQ	Total Requirement (min)	800	0	0	-800	Short

Entity is LSE Screen Results

Type - LSE can show RA showings in Cat1,2 or 3. Cat 1 has a minimum requirement, example - cat 1 requirement for LSEQ is 500 MW and LSEQ has to show a minimum of 500 MW of cat 1 to meet this requirement else they are short. Cat 2 and 3 are maximums, example cat 2 the maximum LSEQ can show is 150 MW.

Qualified showings - What flex RA MW counts towards meeting this category?

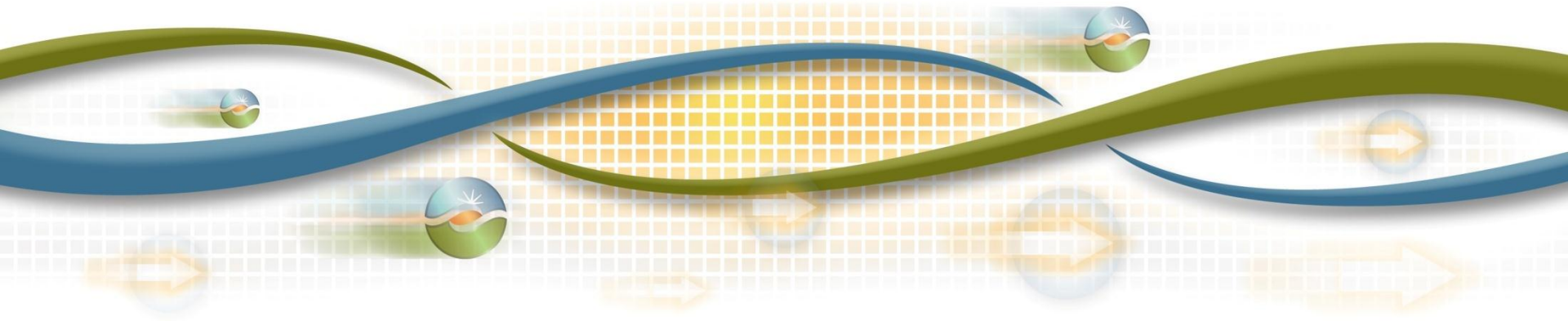
Total requirement:
System_Total Deficiency MW =
 (Qualified_MW_Category1 +
 Qualified_MW_Category2 +
 Qualified_MW_Category3) -
 Total_Requirement_MW

System_Final_Deficiency MW =
 Minimum (System_Total Deficiency
 MW, Category1_Deficiency MW)

Note: **System_Final_Deficiency MW** is the largest of total and category1 deficiencies.

Capacity Procurement Mechanism (CPM)

Backstop and cost allocation



Why do we need backstop capacity?

SC for LSE does not submit a plan that meets its flex RA requirement and does not cure the deficiency

ISO's monthly RA assessment indicates that there is insufficient capacity for a particular category

The ISO may exercise backstop procurement to meet the operational flex needs

Key points

- CPM designation – minimum commitment term of one month; maximum 1 year.
- Same price for backstop procurement of flexible as the applicable capacity procurement price mechanism.
- Cost for a CPM designation will be allocated to all deficient LSEs within the deficient LRA (unless the LRA has established other rules).
- Simultaneous or overlapping designations - the megawatt amount of the capacity procurement mechanism capacity payments shall be the highest megawatt amount of either designation.

Questions?

Markettraining@caiso.com

