3. CORSIA and Resolution A39-3 (Part 2)

ICAO Secretariat

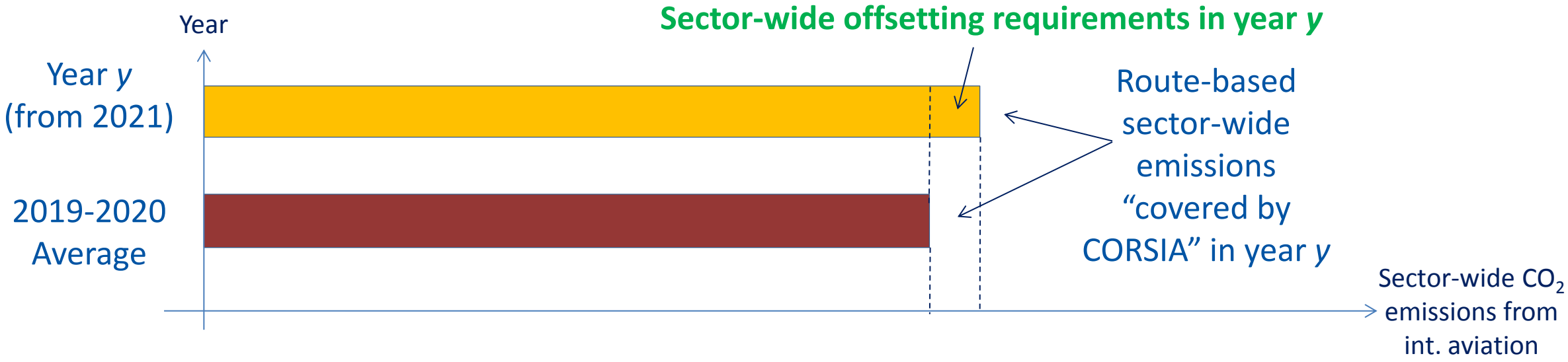
Key design features of the CORSIA

- a) Phased Implementation
- b) Emissions Coverage – Route-based approach
- c) New Entrants
- d) Technical Exemptions
- e) Offsetting Requirements
- f) Review Mechanism

Sector-Wide Offsetting Requirements

- Total amount of sector-wide offsetting requirements in a given year *y* (from 2021) under CORSIA

1. Calculate the 2019 to 2020 average levels of sector-wide emissions, with the route-coverage by CORSIA in year *y*
2. Calculate the year *y* levels of sector-wide emissions, with the route-coverage by CORSIA in year *y*
3. Difference between 1 and 2 is the total amount of sector-wide offsetting requirements in year *y*



Resolution A39-13, paragraph 14: Emissions not covered by CORSIA are not assigned as offsetting requirements of any aircraft operators included in the scheme

Reference: Assembly Resolution A39-3, Paragraph 11.

Sectoral Baseline

- Sectoral baseline is the **2019 and 2020 average** of the emissions from routes covered by CORSIA in a given year (from 2021)
- Sectoral baseline will need to be re-calculated when the routes included in CORSIA change, e.g. when new States volunteer to participate

Pilot phase (2021-2023)			First phase (2024-2026)		
Route Covered by CORSIA?	**CO_2 (2019)**	**CO_2 (2020)**	**Route Covered by CORSIA?**	**CO_2 (2019)**	**CO_2 (2020)**
Yes	52	54	Yes	52	54
No	52	54	No	52	54
Yes	52	54	Yes	52	54
No	53	56	No	53	56
No	53	56	Yes	53	56
No	53	56	Yes	53	56
No	54	59	No	54	59
Total	**104**	**108**	**Total**	**210**	**220**
Baseline	**(104+108)/2 = 106**		**Baseline**	**(210+220)/2 = 215**	

(For illustration purposes only)

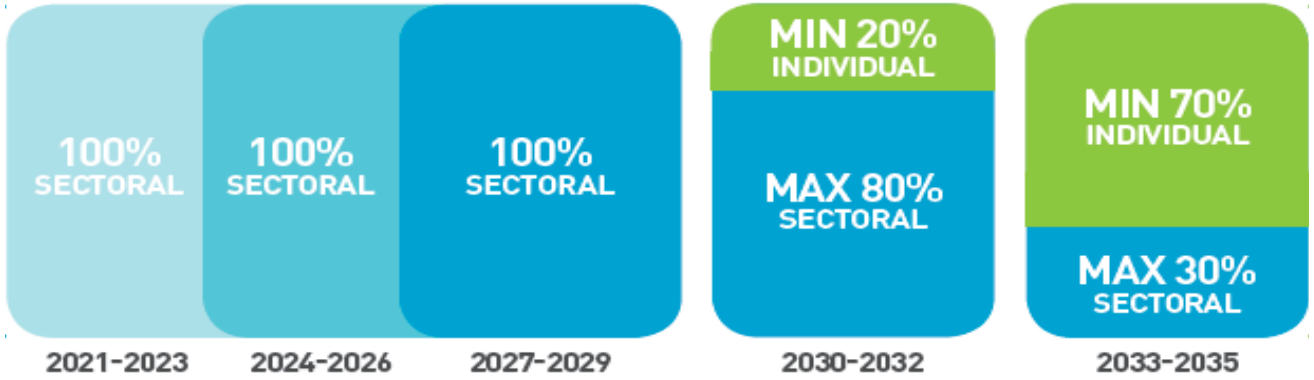
Reference: Assembly Resolution A39-3, Paragraph 11(g).

Offsetting Requirements for Operators

HOW TO CALCULATE CO_2 OFFSET REQUIREMENTS?

Operators' annual emissions X Growth Factor = CO_2 offset requirements

The Growth Factor changes every year taking into account both the sectoral and the individual operators' emissions growth.



5 Reference: Assembly Resolution A39-3, Paragraph 11.

Offsetting Requirements - Calculation

- From 2021 to 2029: 100% Sectoral Approach:

Operator's Requirements in year y (from 2021) → $OR_y = OE_y \times \frac{(SE_y - SE_B)}{SE_y}$

Operator's Emissions covered by CORSIA in year y (from 2021)

Sectoral growth factor in year *y* *(from 2021)*

SE_y = *Sectoral Emissions, with the route-coverage by CORSIA in year y*

SE_B = *Sectoral Emissions in Baseline (average of 2019 and 2020) with route-coverage by CORSIA in year y*

- For the pilot phase (from 2021 to 2023), each State can choose OE_y either:
  - the operator's emissions in a given year (i.e. 2021, 2022 and 2023), or
  - the operator's emissions referring back to a single year of 2020

 Reference: Assembly Resolution A39-3, Paragraph 11.

Offsetting Requirements - Calculation

Dynamic Approach – The shares of Sectoral / Individual Approaches change over time

- From 2030 to 2032: Maximum 80% Sectoral Approach + At least 20% Individual Approach*

Operator's Requirements in year y (from 2030)

$$OR_y = \leq 0.8 \times \left[OE_y \times \frac{(SE_y - SE_B)}{SE_y} \right] + \geq 0.2 \times \left[OE_y \times \frac{(OE_y - OE_B)}{OE_y} \right]$$

Share of Sectoral Approach

Share of Individual Approach

Operator's Requirements in year y (from 2030) with Sectoral Approach

Operator's Requirements in year y (from 2030) with Individual Approach

- From 2033 to 2035: Maximum 30% Sectoral Approach + At least 70% Individual Approach*

Operator's Requirements in year y (from 2033)

$$OR_y = \leq 0.3 \times \left[OE_y \times \frac{(SE_y - SE_B)}{SE_y} \right] + \geq 0.7 \times \left[OE_y \times \frac{(OE_y - OE_B)}{OE_y} \right]$$

* The Council will recommend to the Assembly in 2028 whether and to what extent to adjust the percentages

Reference: Assembly Resolution A39-3, Paragraph 11.

Offsetting Requirements - Calculation example

This example illustrates the offsetting requirements for different aircraft operators with different growth scenarios, to see the effect of using the Sectoral Approach and Individual Approach on the offsetting requirements.

	CO_2 emissions [Million Tonnes]		Growth Factor Year X	Offsetting Requirements in Year X [Million Tonnes]		
	Baseline (Average 2019-2020)	Year X		0% Individual 100% Sectoral (years 2021-29)	(*)20% Individual 80% Sectoral (years 2030-32)	(*)70% Individual 30% Sectoral (years 2033-35)
Operator A - Fast Grower	100	125	20%	16	18	22
Operator B - Slow Grower	100	105	4.8%	14	12	8
International Aviation Sector	200	230	13%	30	30	30

(*) Values used are for representative purposes only; these values are subject to change

Reference: Assembly Resolution A39-3, Paragraph 11.

Offsetting Requirements - Calculation example

$$\frac{(230-200)}{230} = 13\%$$

$$\frac{(125-100)}{125} = 20\%$$

$$30\% * \left[125 * \frac{(230-200)}{230}\right] + 70\% * \left[125 * \frac{(125-100)}{125}\right] = 22$$

	CO_2 emissions [Million Tonnes]		Growth Factor Year X	Offsetting Requirements in Year X [Million Tonnes]		
	Baseline (Average 2019-2020)	Year X		0% Individual 100% Sectoral (years 2021-29)	(*)20% Individual 80% Sectoral (years 2030-32)	(*)70% Individual 30% Sectoral (years 2033-35)
Operator A - Fast Grower	100	125	20%	16	18	22
Operator B - Slow Grower	100	105	4.8%	14	12	8
International Aviation Sector	200	230	13%	30	30	30

$$125 * \frac{(230-200)}{230} = 16$$

(*) Values used are for representative purposes only; these values are subject to change

Reference: Assembly Resolution A39-3, Paragraph 11.

Key design features of the CORSIA

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Review Mechanism

- Periodic review of the CORSIA every three years starting in 2022
- Review will allow the Council to make informed recommendations to the Assembly on whether it is necessary to make adjustments to the next phases of the scheme
- Special review by the end of 2032 on termination of the scheme, its extension or any other improvements of the scheme beyond 2035

	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Phases	**Pilot Phase (voluntary, 3 years)**			**First Phase (voluntary, 3 years)**			**Second Phase (all non-exempted States, 9 years)**								
Compliance cycles	**Cycle 1 (3 years)**			**Cycle 2 (3 years)**			**Cycle 3 (3 years)**			**Cycle 4 (3 years)**			**Cycle 5 (3 years)**		
Periodic reviews		**Review 1**			**Review 2**			**Review 3**			**Review 4**	**Special**		**Review 5**	
Assemblies		**A41**			**A42**			**A43**			**A44**			**A45**	

11 Reference: Assembly Resolution A39-3, Paragraphs 9(g), 16 and 18.

Key design features of the CORSIA

- a) Phased Implementation
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CORSIA Design Features

Key design features of the CORSIA

Design Feature	Corresponding Assembly Resolution A39-3 Paragraph(s)
a) Phased Implementation	9
b) Route-based Approach	10
c) New Entrants	12
d) Technical Exemption	13
e) Offsetting Requirements	11
f) Review Mechanism	9 g) and 18

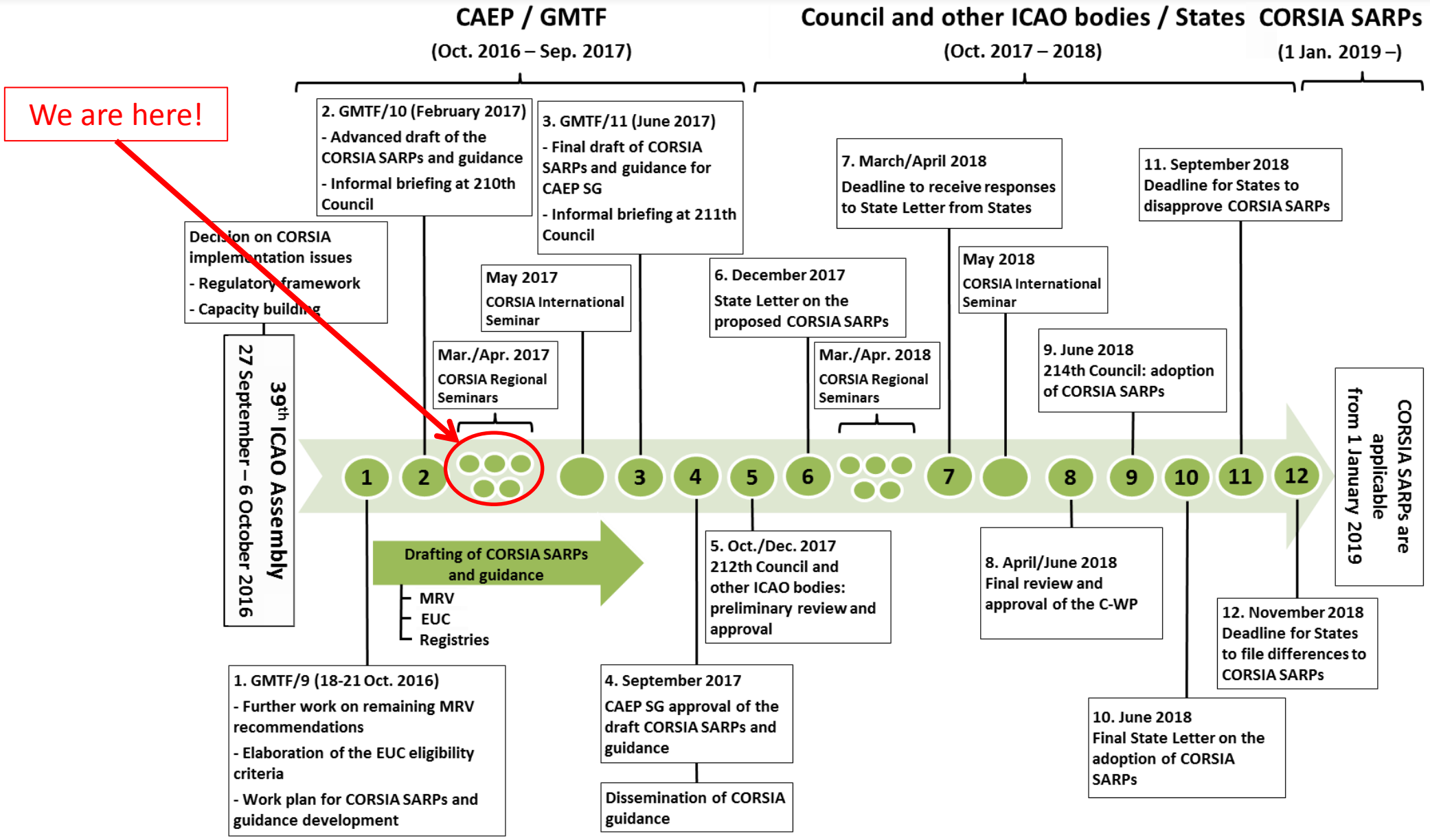
Check your copy of Assembly Resolution A39-3!

Time to prepare for CORSIA Implementation

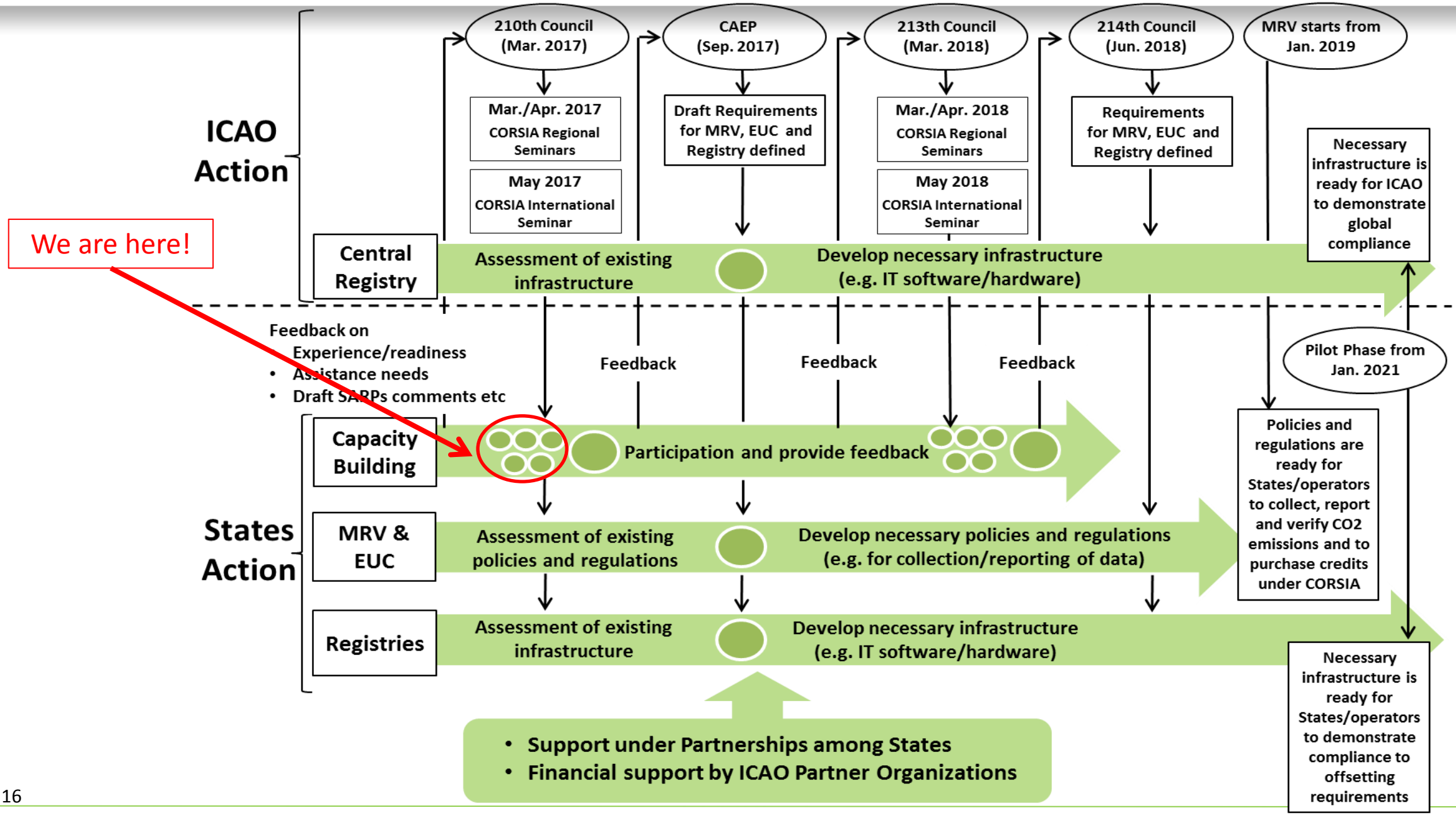
- Standards and Recommended Practices (SARPs) and guidance
  - Monitoring, Reporting and Verification (MRV) system
  - Emissions Unit Criteria (EUC)
  - Registry Architecture for CORSIA
- Capacity Building
  - ICAO and Member States are to take all necessary actions in providing the capacity building and assistance and building partnerships for CORSIA implementation
  - Capacity building includes seminars/training, and support for the development of national regulatory framework and the establishment of necessary infrastructure (e.g. IT hardware/ software)

 Reference: Assembly Resolution A39-3, Paragraphs 20 and 22.

CORSIA SARPs and Guidance Development Timeline



CORSIA Capacity Building and Assistance



CORSIA Implementation Features

Implementation Features	Corresponding Assembly Resolution A39-3 Paragraph(s)
a) Monitoring, Reporting and Verification (MRV)	20 a), 20 b), 22 a), 22 b)
b) Emissions units criteria (EUC)	20 c), 20 d), 20 e), 23, 24, 25
c) Registries	20 f), 20 g), 20 h), 22 c), 22 d)

Check your copy of Assembly Resolution A39-3!

Seminar Programme

1. Objectives of the Seminar and Overview of CORSIA
2. CORSIA and Resolution A39-3 (Part 1)
   - *Small group exercise 1*: Participation and emissions coverage in CORSIA
3. CORSIA and Resolution A39-3 (Part 2)
   - *Small group exercise 2: Calculation and distribution of offsetting requirements in CORSIA*
4. CORSIA MRV System
   - *Small group exercise 3: Development of CO_2 emissions report*
5. Emissions Units and Registries
   - *Small group exercise 4: Flow of CO_2 emissions data and emissions units under CORSIA*
6. Capacity Building and Next Steps
7. Closing Remarks

QUESTIONS ?

Group Exercise 2

Calculation and distribution of offsetting requirements in CORSIA

THANK YOU

More information on the CORSIA:

- ICAO web site **http://www.icao.int/env**
  - CORSIA Video
  - CORSIA FAQs
  - CORSIA Participating participation
  - Environment Report 2016