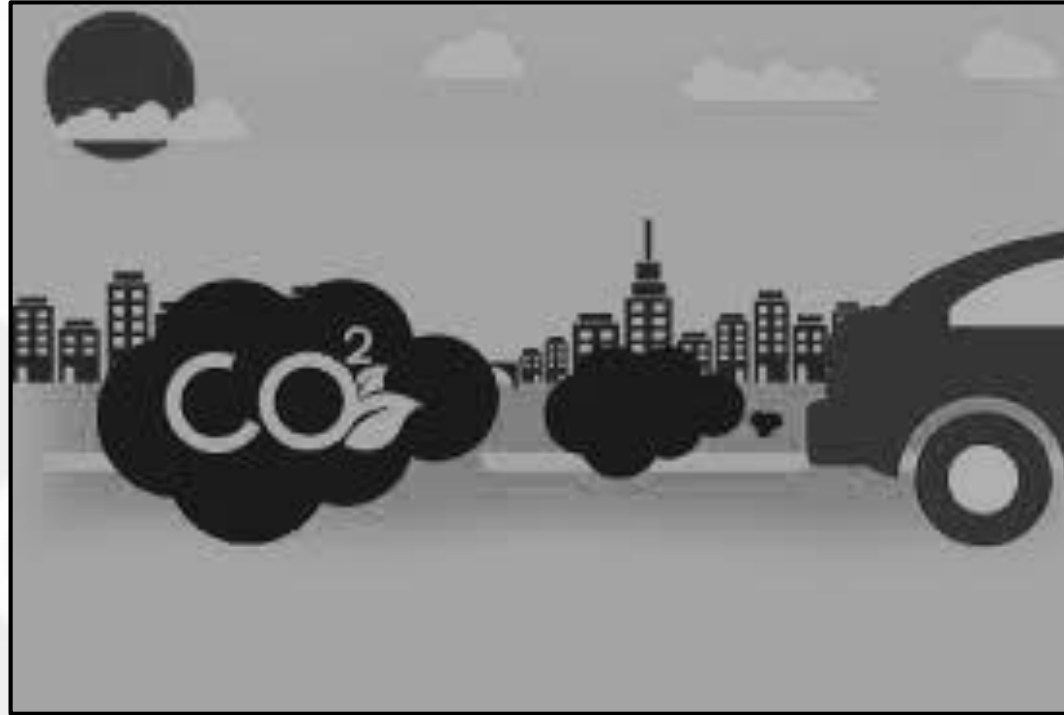


Emission Control Manufacturers Association

ECT 2016



“ Emission Control Technology for Sustainable Growth ”

P. Panda

Executive Vice President – Engineering Division



Changing Timelines

Considerations for the Future

Changing Timelines

Considerations for the Future

Emission Control Manufacturers Association

2016-17

2017-18

2018-19

2019-20

2020-21

2021-22

2022-23

2023-24

2024-25

2025-26

(4 + 5) Years

Changing Timelines

Considerations for the Future

4 Years

Increase in Complications

MSR

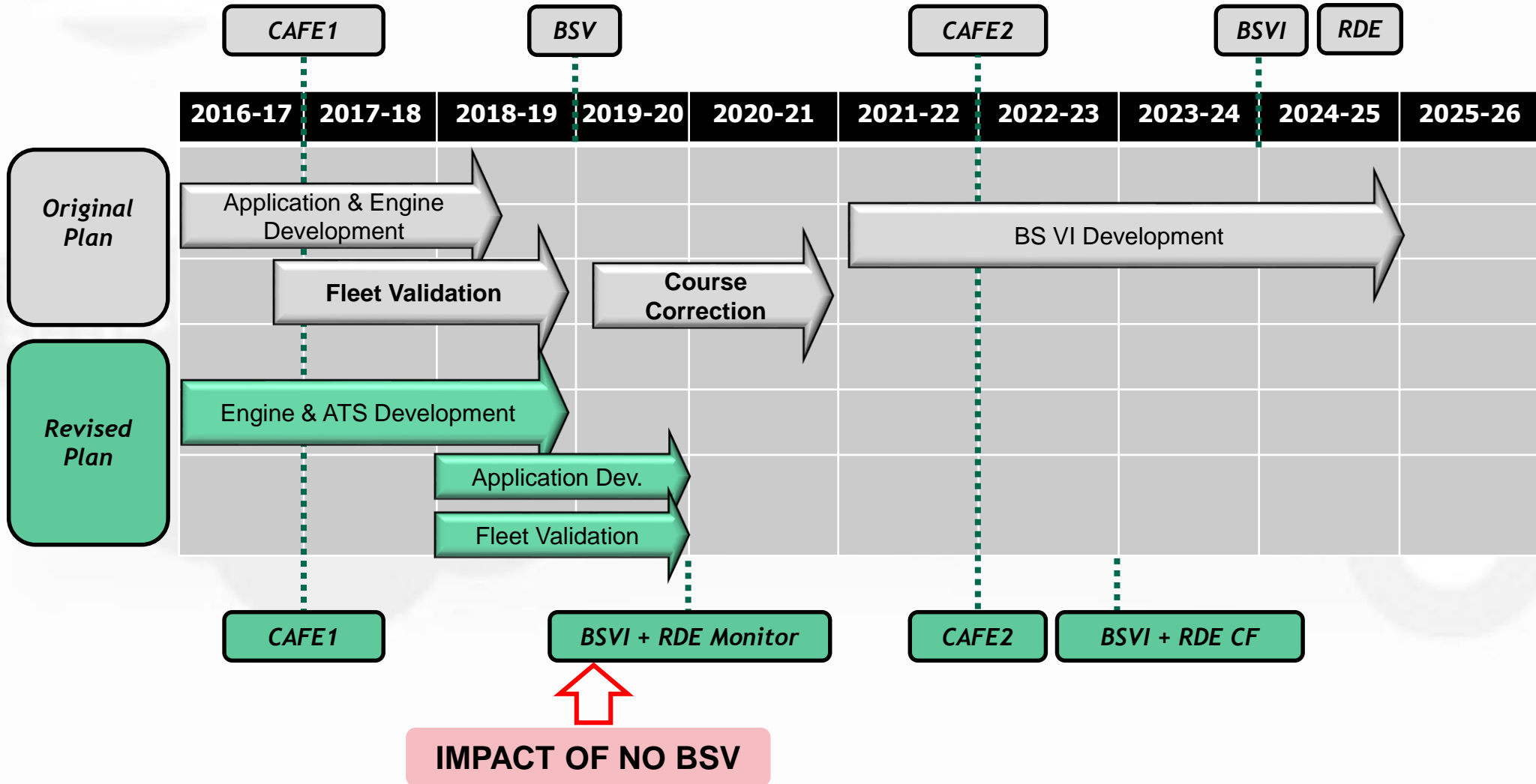
MSR + BS VI

MSR

MSR + BS VI

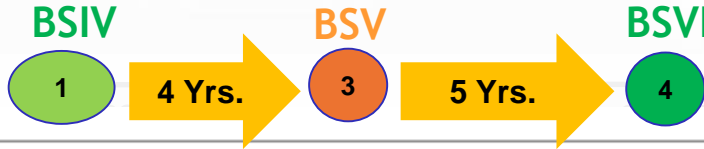
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Changing Timelines :



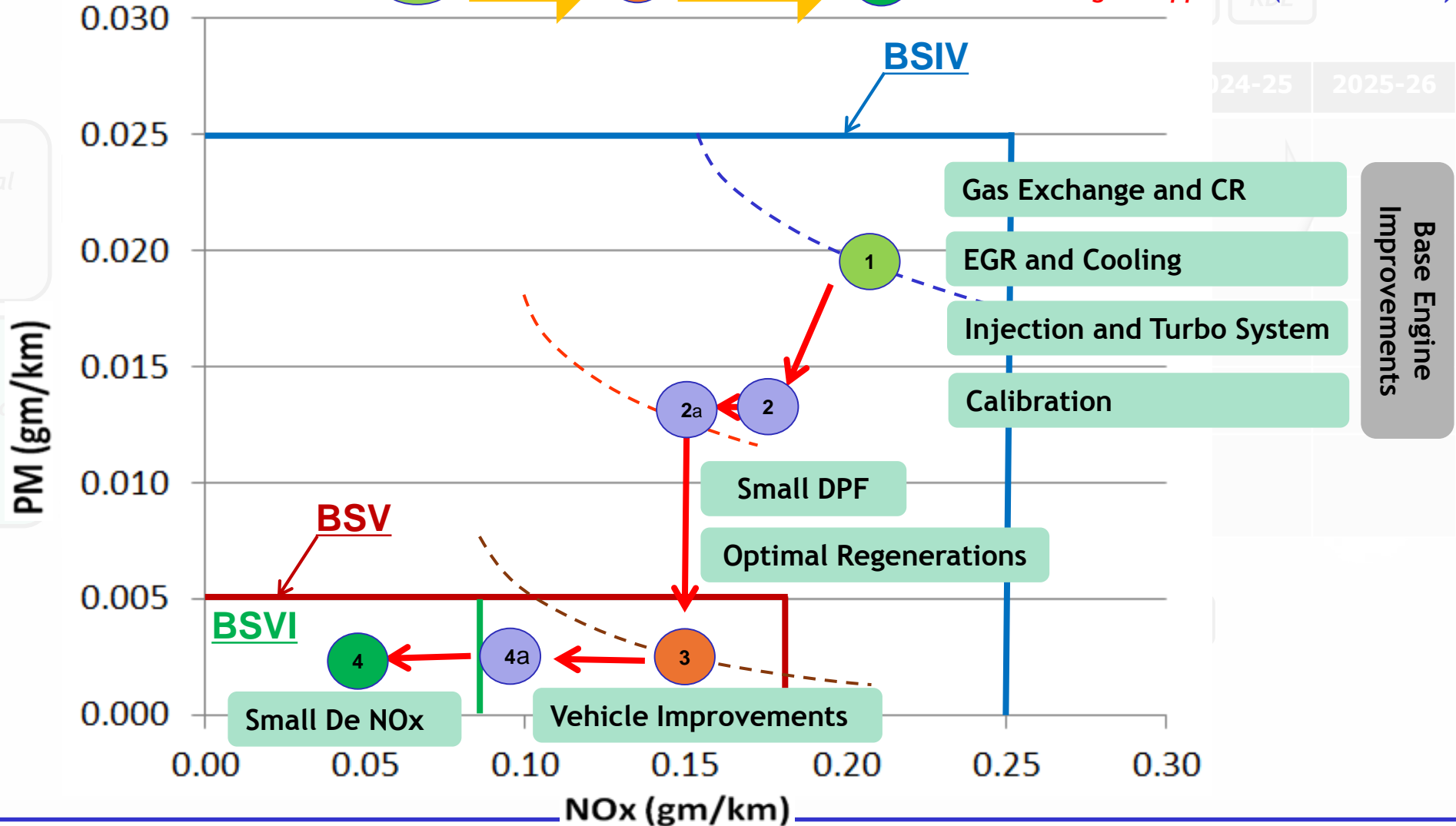
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Changing Timelines :



Impact of NO BSV

Original Approach (BSIV-BSV-BSVI)

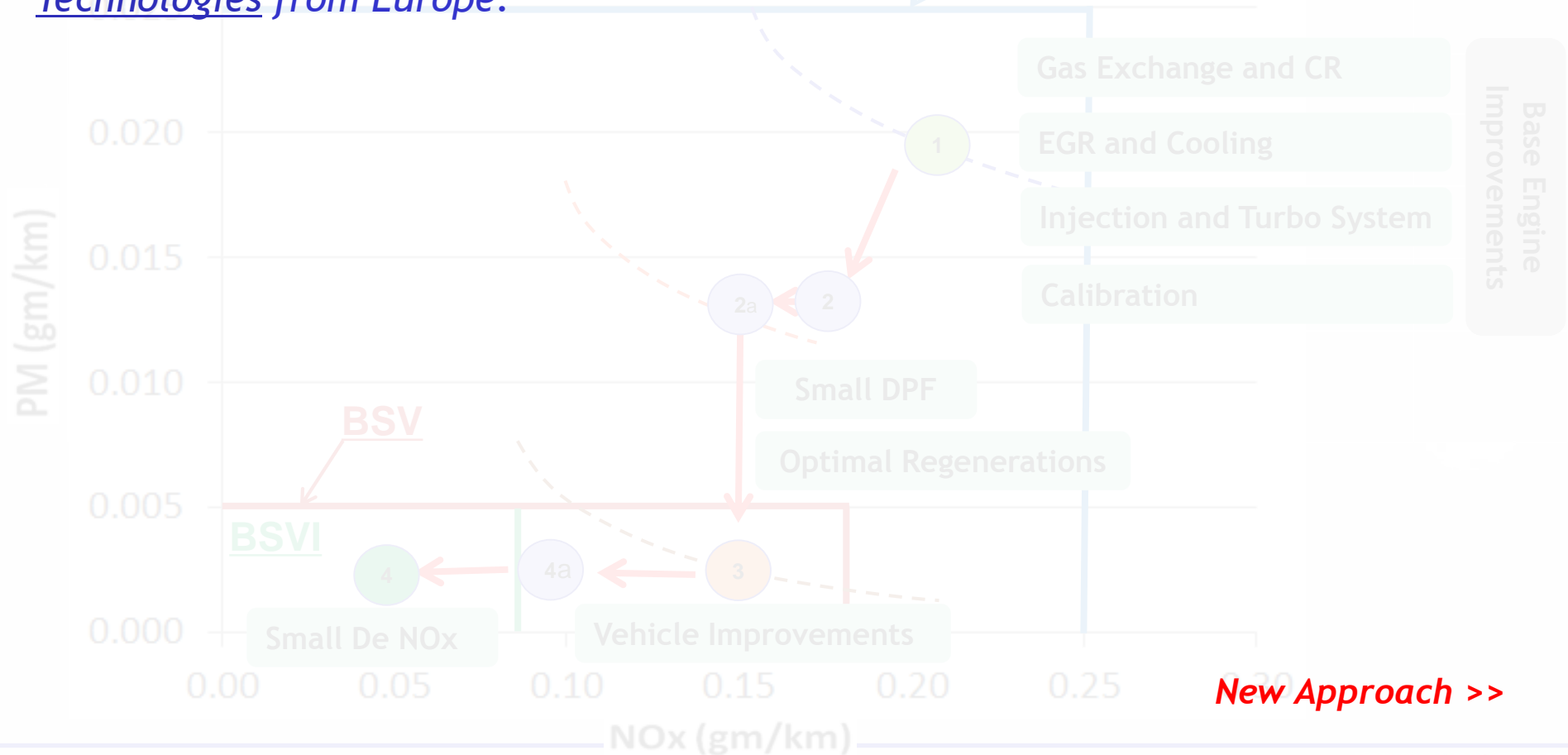


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Merits in Original Approach : (BSIV-BSV-BSVI)

Sufficient Time for Vehicle Level improvements (BSV to BSVI ~ 5Yrs.)

Cost Effective/ Quality Effective approach due to availability of Technologies from Europe.

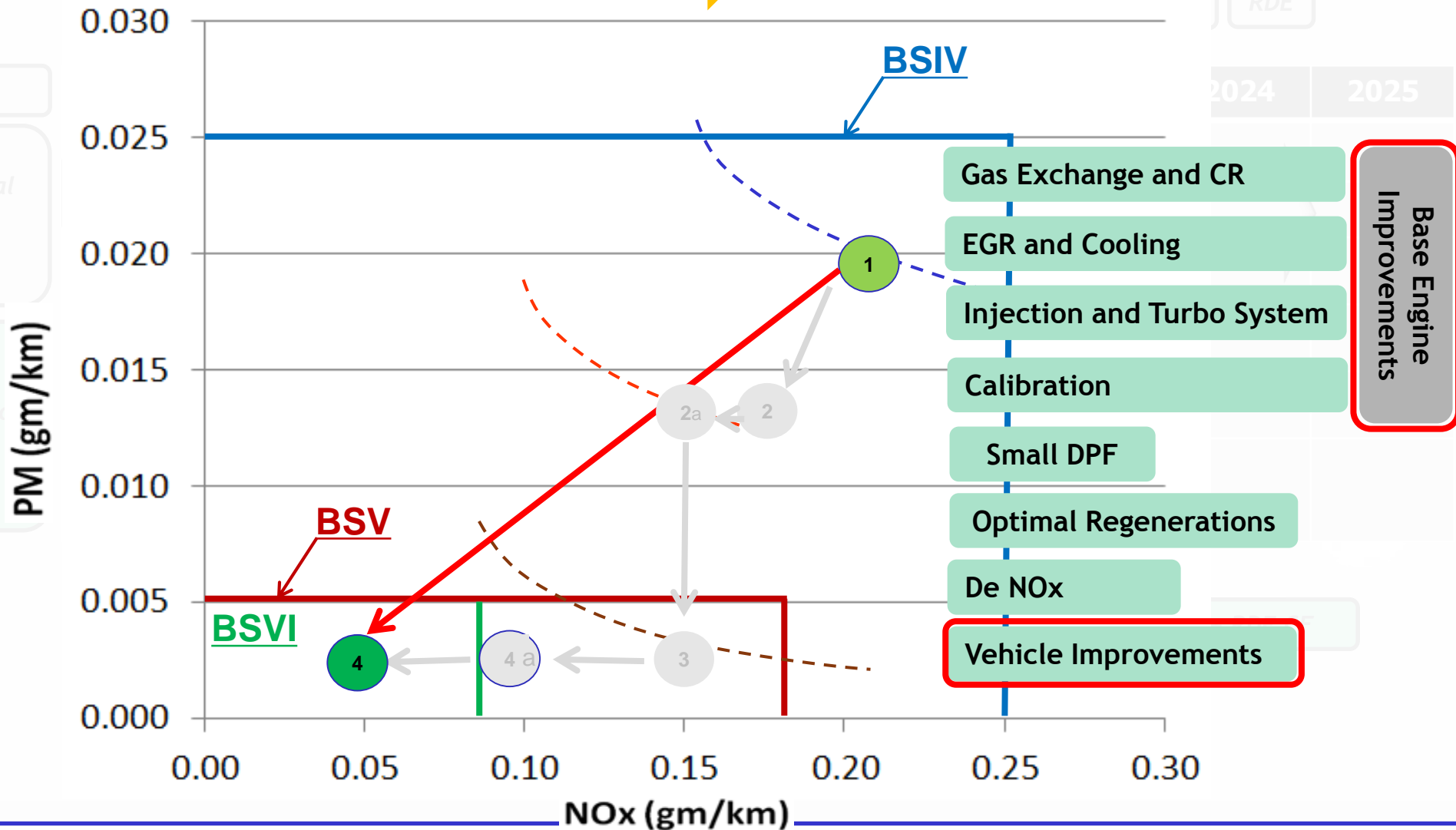


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Considerations for the Future



Impact of NO BSV
New Approach (BSIV-BSVI)



Emission Control Manufacturers Association

Considerations for the Future

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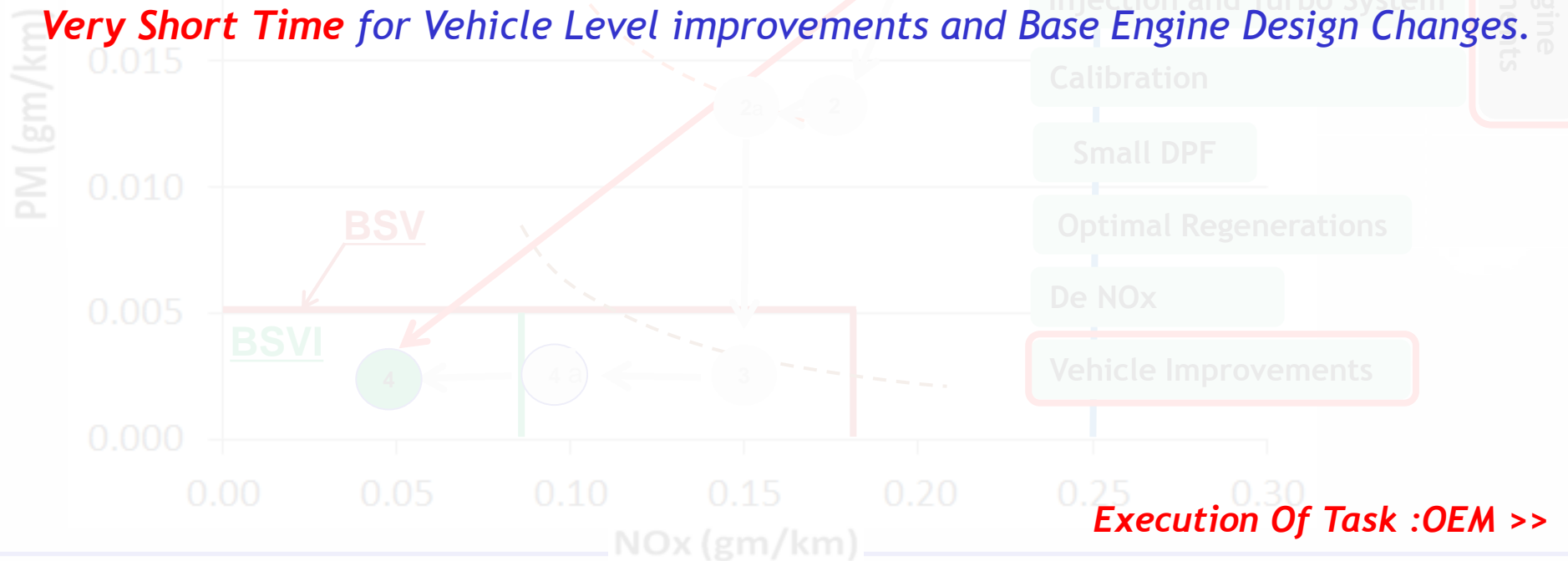
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Impact of NO BSV

New Approach (BSIV-BSVI)

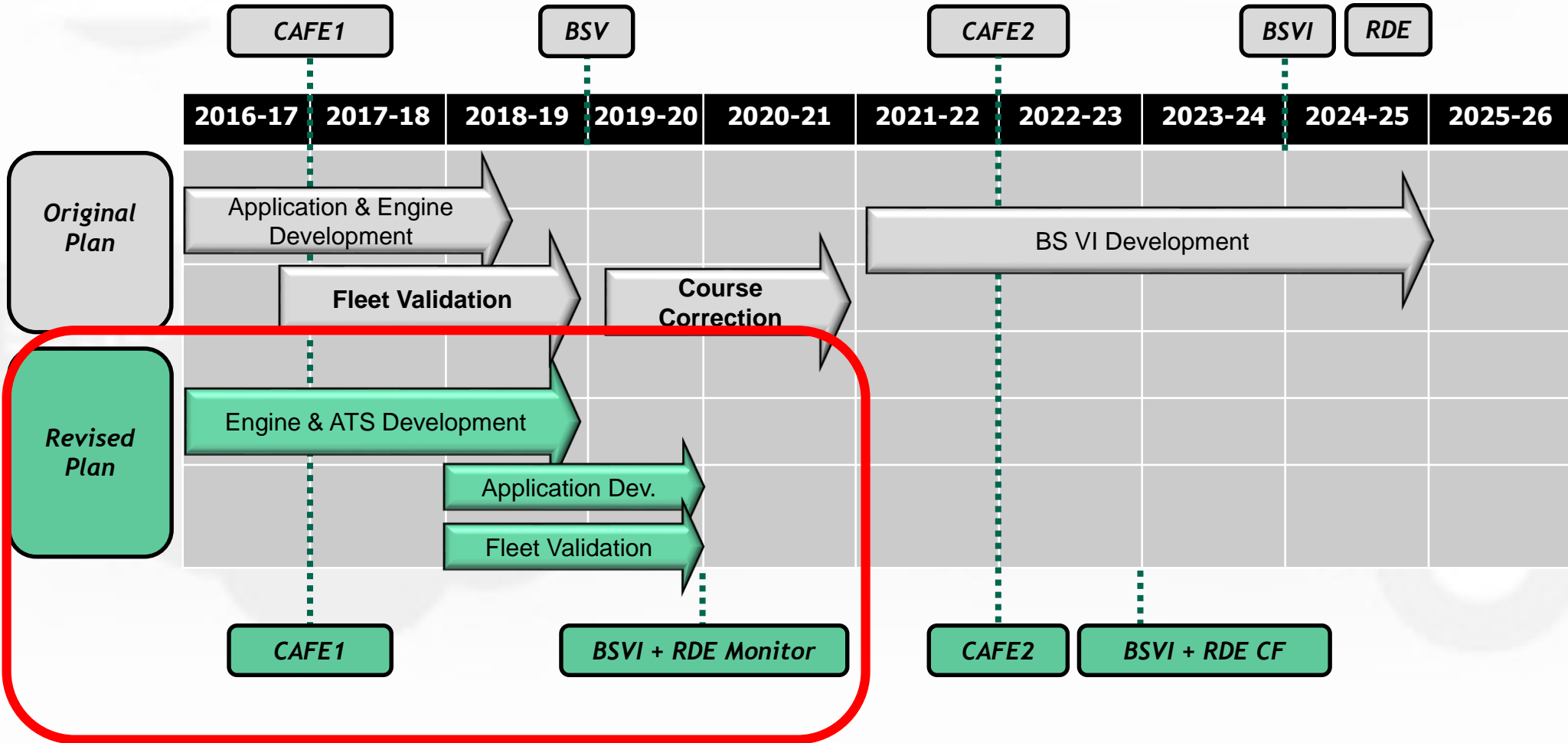
Considerations in New Approach : (BSIV-BSVI < 4Yrs)

Very Short Time for Vehicle Level improvements and Base Engine Design Changes.



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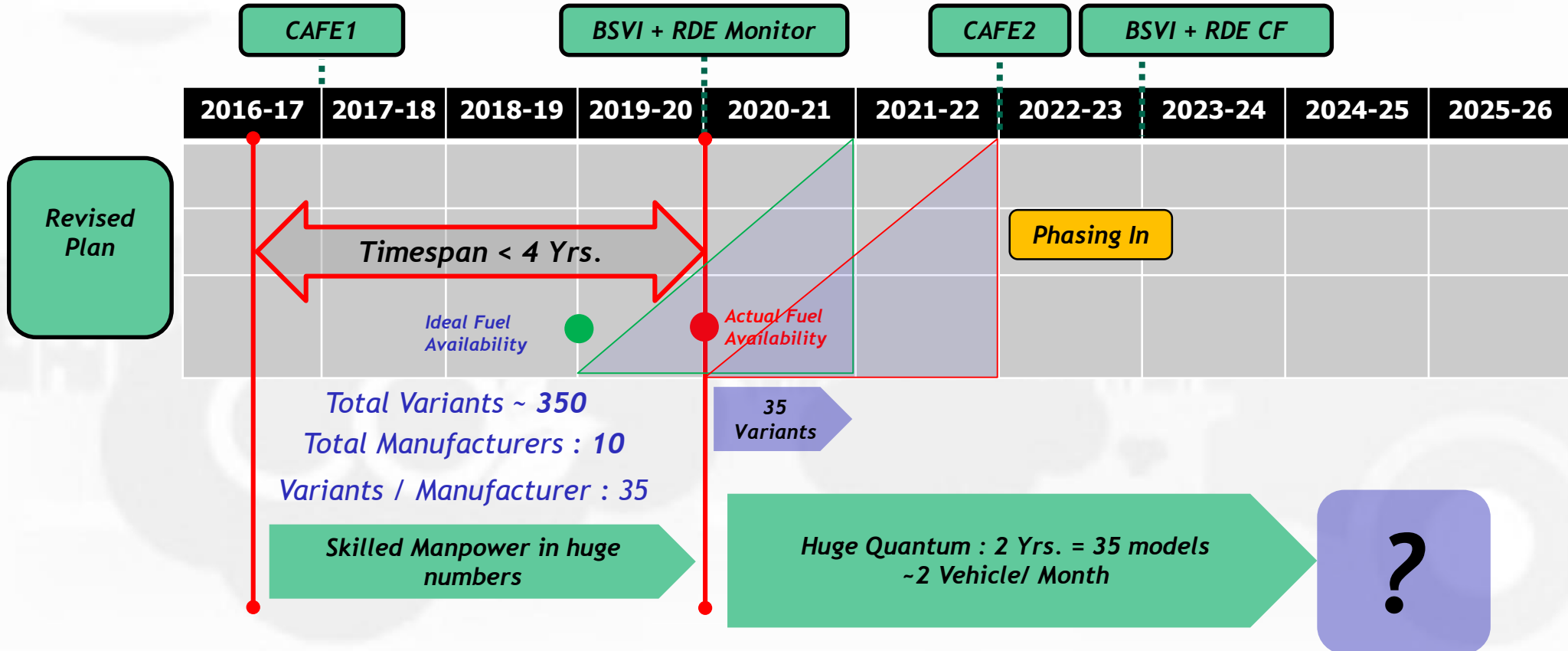
Changing Timelines :



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Considerations for the Future

Execution Of Task :OEM >>



Skilled Manpower in Huge Nos. Required

Phasing In gives adequate time to plan and implement

Emission Control Manufacturers Association

Considerations for the Future

Execution Of Task :OEM >>

Merits in Original Approach : (BSIV-BSV-BSVI)

Sufficient Time for Vehicle Level improvements (BSV to BSVI ~ 5Yrs.)

Cost Effective approach due to availability of Technologies from Europe.25 2025-26

Revised Plan

Considerations in New Approach : (BSIV-BSVI < 4Yrs)

Very Short Time for Vehicle Level improvements and Base Engine Design Changes.

Skilled Manpower in huge nos. and **Phasing In** to meet the target.

Variants / Manufacturer : 35

Skilled Manpower in huge numbers

Huge Quantum : 2 Yrs. = 35 models
-2 Vehicle/ Month

?

Skilled Manpower in Huge Nos. Required

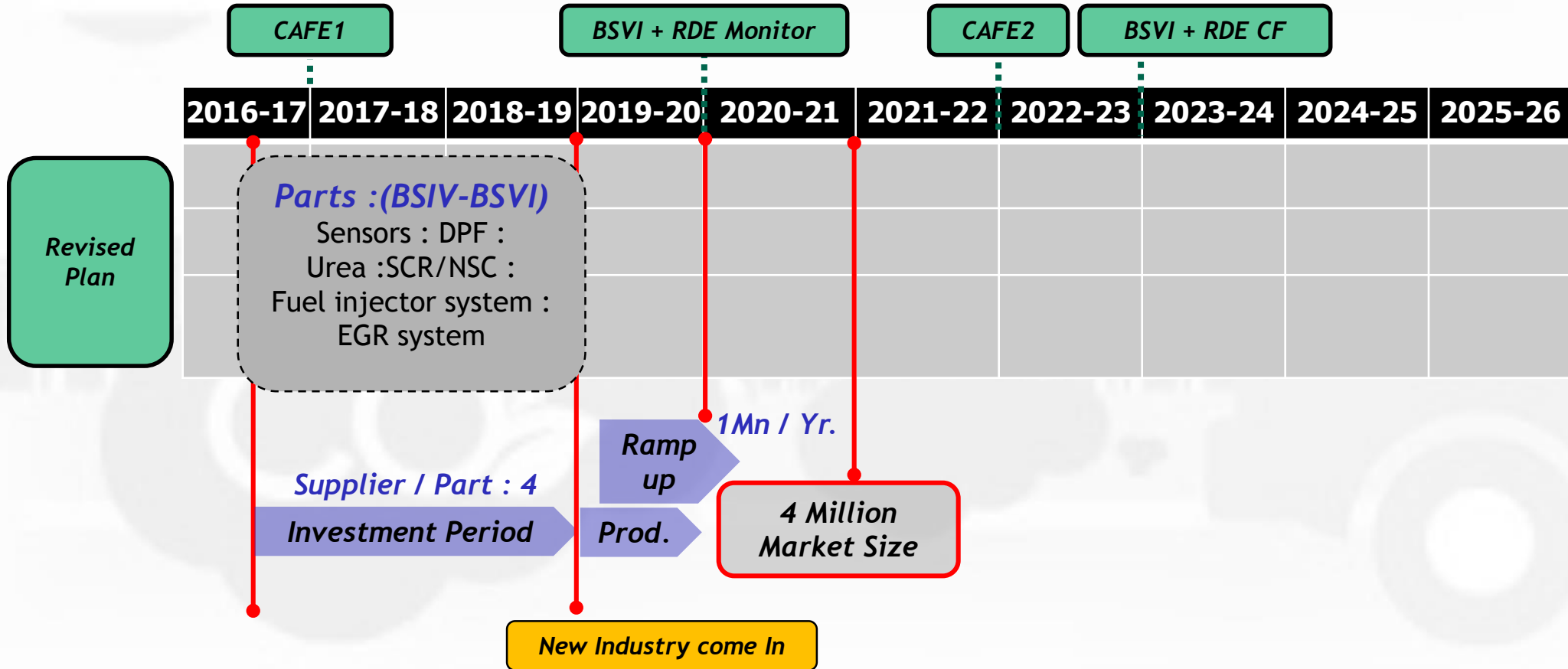
Phasing In gives adequate time to plan and implement

Execution Of Task :Supplier >>

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Considerations for the Future

Execution Of Task :Supplier >>



Skilled Manpower in huge nos. required

Cost (For Consumer) and Technology to be developed hand in hand indigenously.

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Merits in Original Approach : (BSIV-BSV-BSVI)

Sufficient Time for Vehicle Level improvements (BSV to BSVI ~ 5Yrs.)

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Considerations in New Approach : (BSIV-BSVI < 4Yrs)

Very Short Time for Vehicle Level improvements and Base Engine Design Changes.

Skilled Manpower in huge nos. and Phasing In to meet targets.

Suppliers Skill Upgradation In huge nos. required in a very short timeframe.

Cost (For Consumer) and Technology to be developed hand in hand **indigenously**.

New Industry come In

Skilled Manpower in huge nos. required

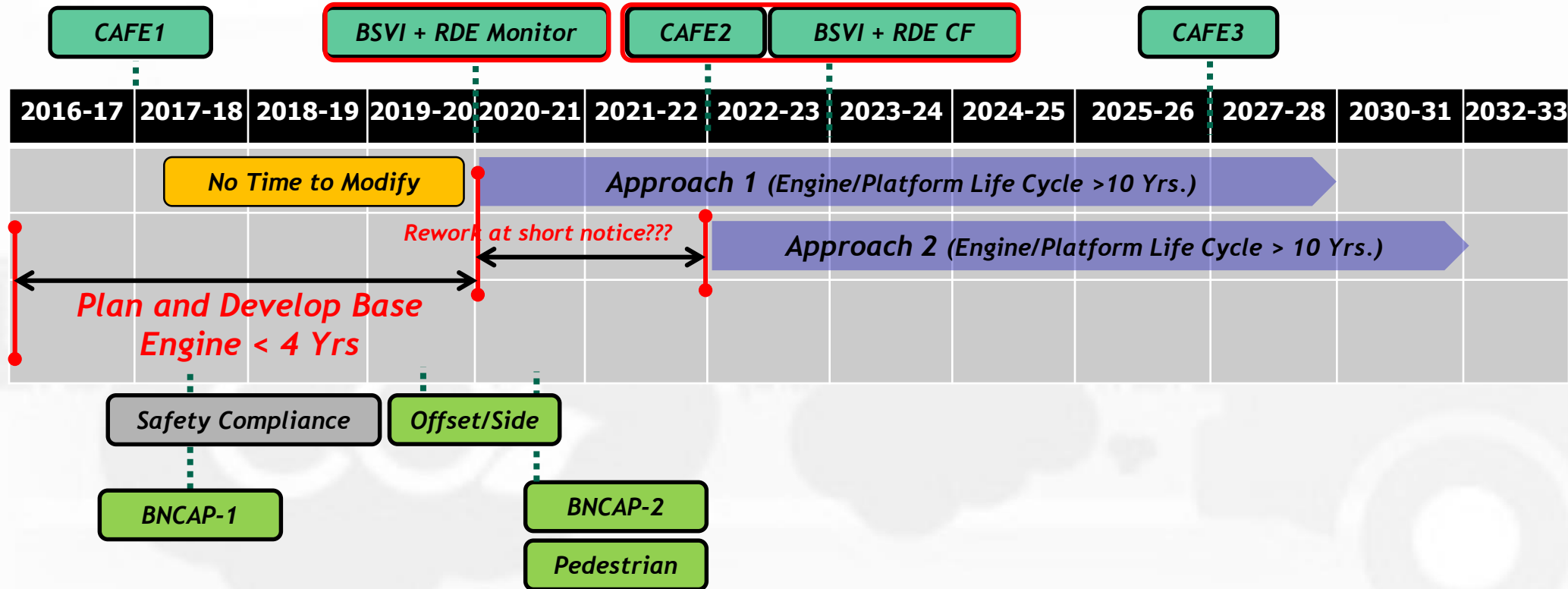
Cost (For Consumer) and Technology to be developed hand in hand **indigenously**

Engine/ Platform Design Constraints

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Considerations for the Future

Engine/Platform Design Constraints



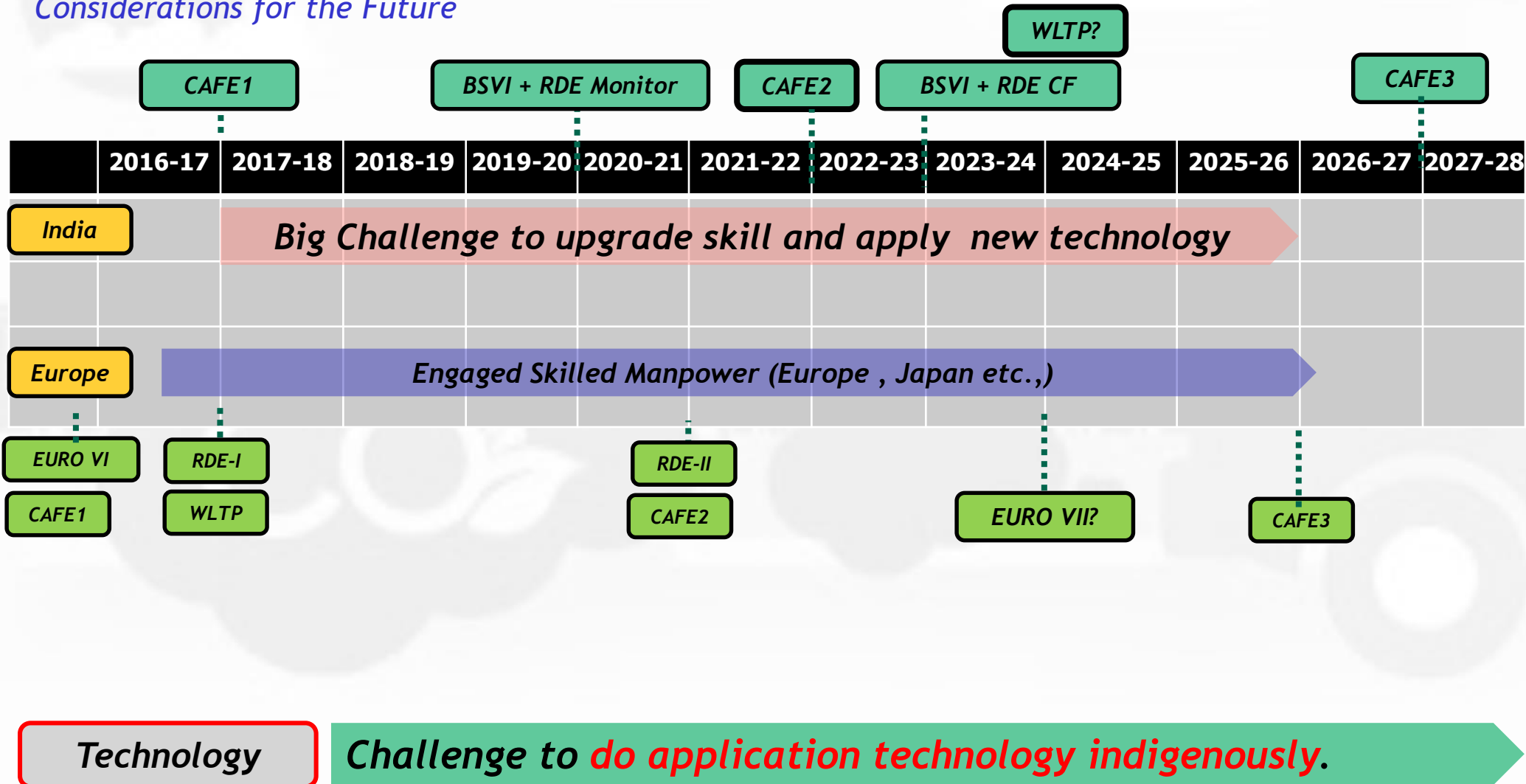
Base E/G Design

Big challenge to channelize **available resources** for meeting RDE, CAFÉ and Safety, concurrently.

Skill and Timelines

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Considerations for the Future



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Merits in Original Approach : (BSIV-BSV-BSVI)

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Cost Effective/ Quality Effective approach due to availability of Technologies from Europe.

Big Challenge to upgrade skill and develop new technology

Considerations in New Approach : (BSIV-BSVI < 4Yrs)

Very Short Time for Vehicle Level improvements and Base Engine Design Changes.

Skilled Manpower in huge nos. and Phasing In to meet targets.

Suppliers Skill Upgradation In huge nos. required in a very short timeframe.

Base Engine Design (Life Cycle >10 Yrs.) : **RDE (2023) + CAFE 2 (2022) + Safety**

Big challenge to upgrade skills and develop new technology, **indigenously.**

Technology

Challenge to **develop technology indigenously.**

Trends and Investments

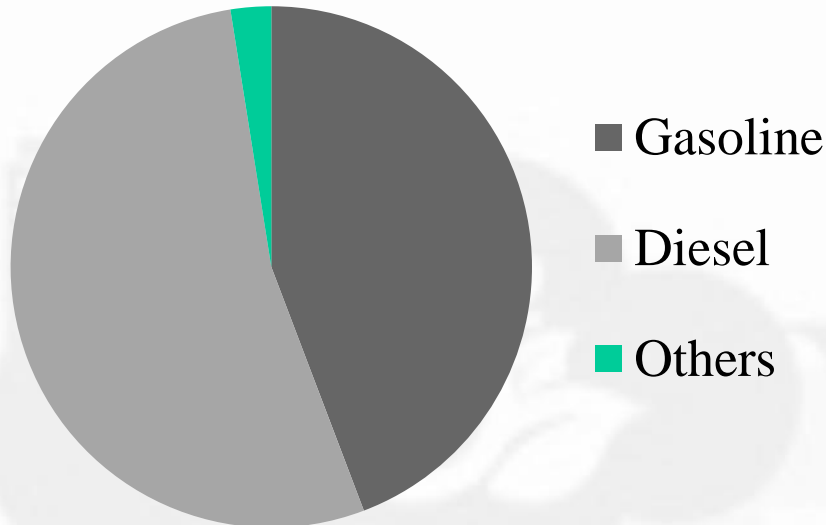
Emission Control Manufacturers Association

Considerations for the Future

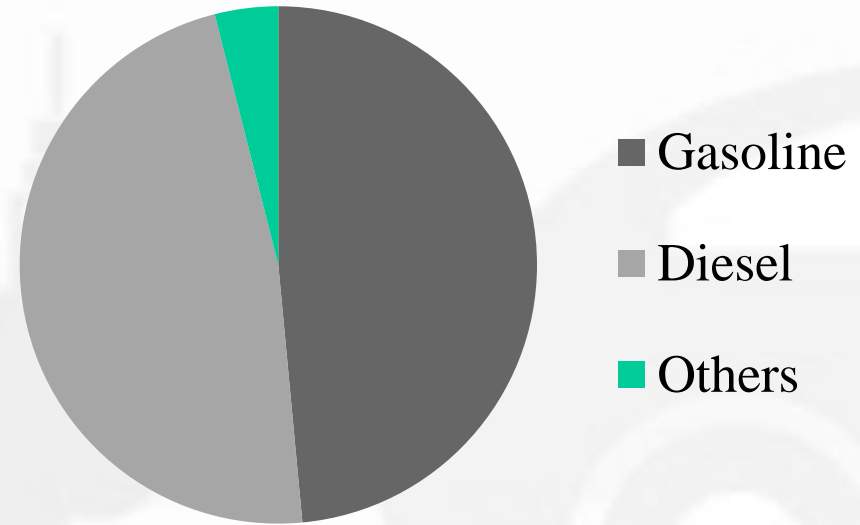
Trend in Europe

Trends and Investments

2015 : Market Size 13 Million



2020 : Market Size 15 Million



By 2020, despite the decreasing market, **Diesel** still hold **a big share** in Europe.

Market trend in India ?

Planned Investments by Suppliers

Others : CNG/ Ethanol/ Electric

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Considerations for the Future

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Cost Effective approach due to availability of Technologies from Europe.

FY

2025

Parts :(BSIV-BSVI)

Sensors : DPF :

Urea :SCR/NSC :

EGR system

Revised

Plan

Considerations in New Approach : (BSIV-BSVI < 4Yrs)

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Big challenge to upgrade skills and develop new technology, indigenously.

Planned Investments by Supplier to meet the emission norms for Diesel market.

Skill Upgradation Required

Emission Control Manufacturers Association

Considerations for the Future

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Skill Upgradation Required

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Opportunities



Challenges



Plan BSIV to BSVI implementation in <4Yrs

Upgrade Skill Level of Manpower to make in India

Make the Design cost effective to sell in India

Plan In India

Skill In India

Sell In India



Thank you