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## Алтернативни погони друмских возила

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# Хибридни и Електрични погон возила

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**Partnership for Promotion and Popularization of Electrical Mobility through Transformation and Modernization of WB HEIs Study Programs/PELMOB**

Call: ERASMUS-EDU-2022-CBHE-STRAND-2

Project Number: 101082860

## Перспективе примене алтернативних горива (ЕУ)



### Assessment

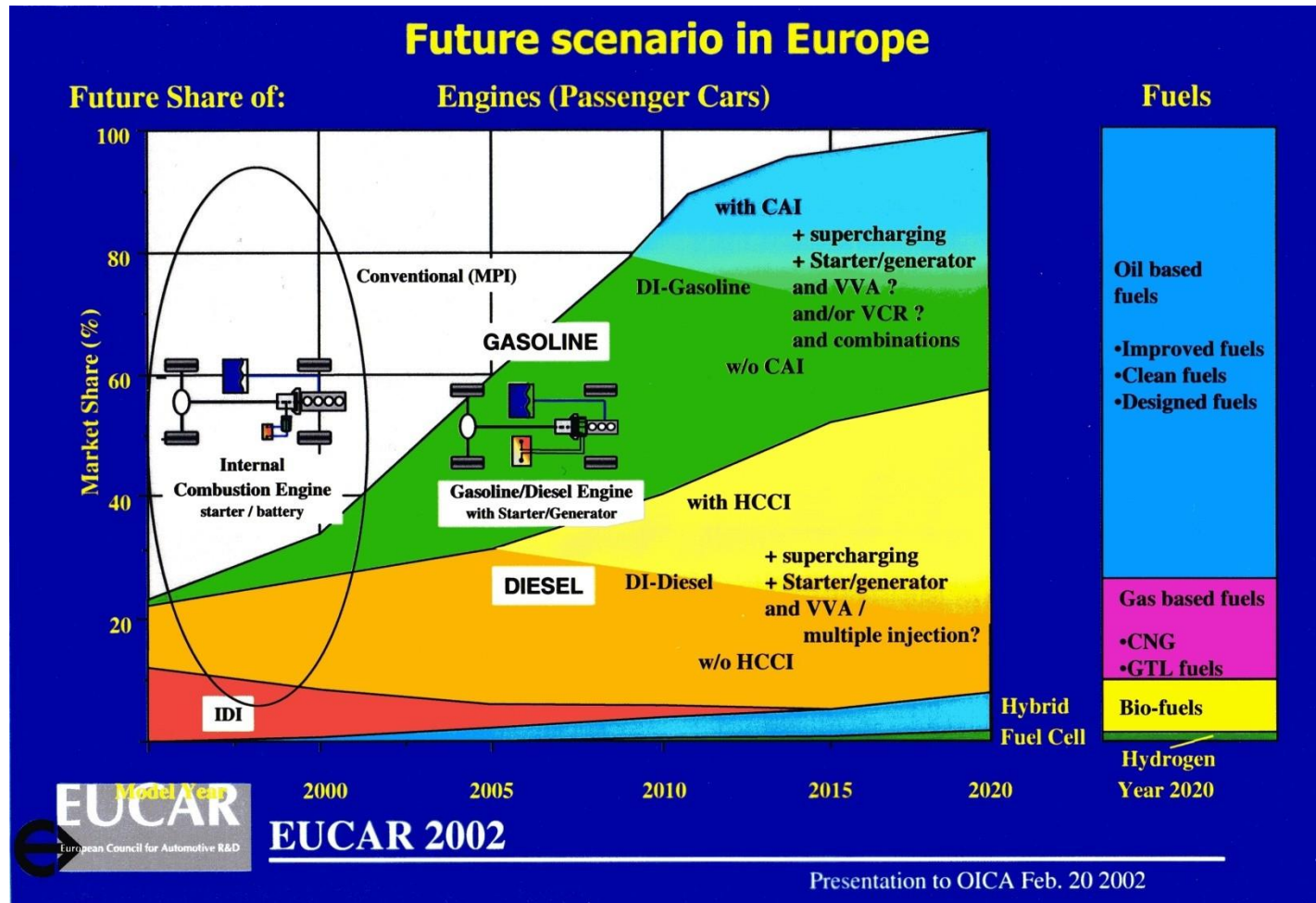
#### Options with potential over the next 20 years

Only three options appear to have a volume potential of more than 5% fuel consumption. If **active policy** is decided to promote them, their **optimistic** development scenario is (% fuel consumption):



	Biofuel	Natural gas	Hydrogen	Total
2005	2			2
2010	6	2		8
2015	(7)	5	2	14
2020	(8)	10	5	(23)

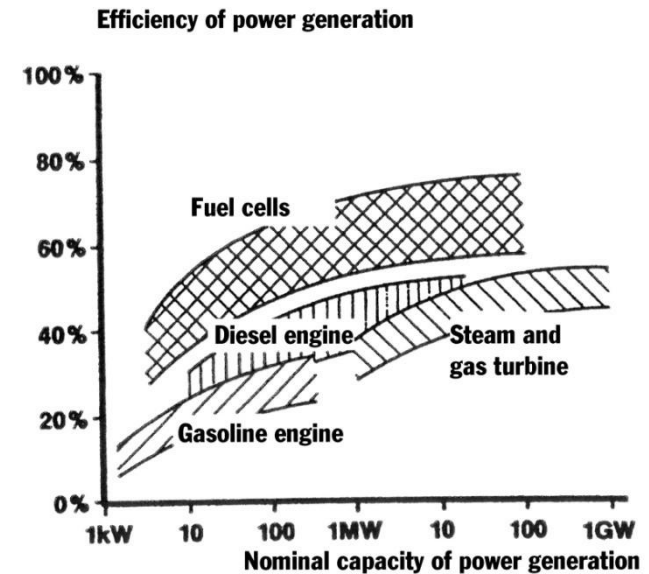
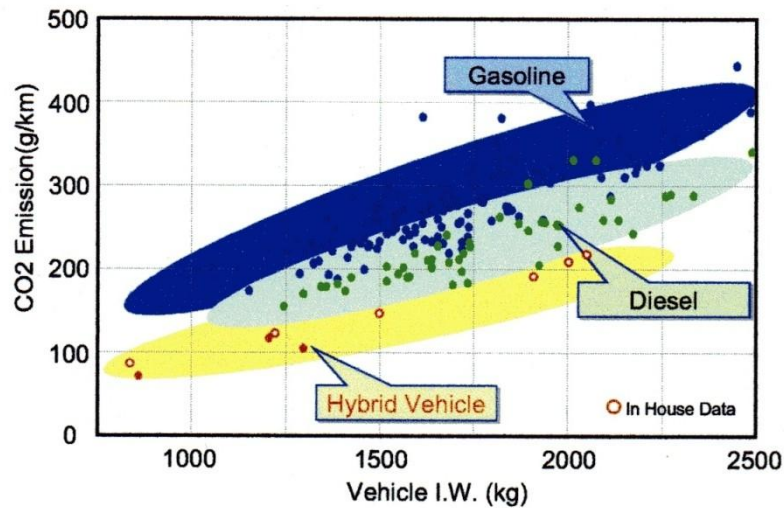
# Перспектива примене алтернативних горива и погона



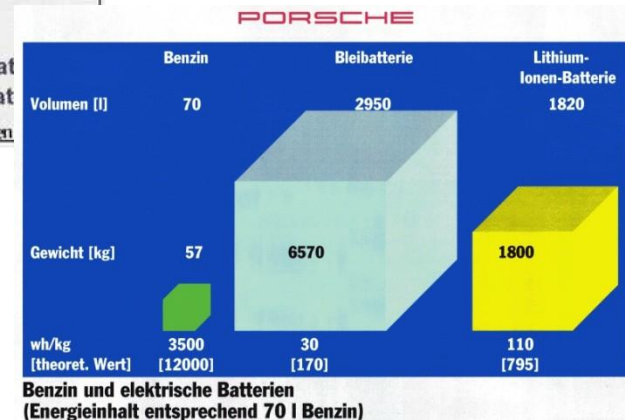
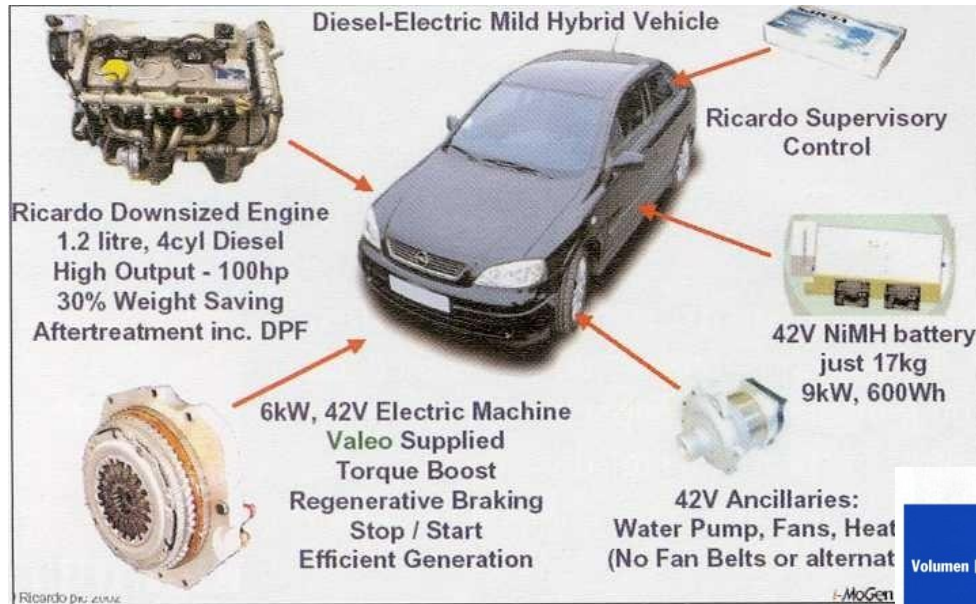
## Хибридне технологије



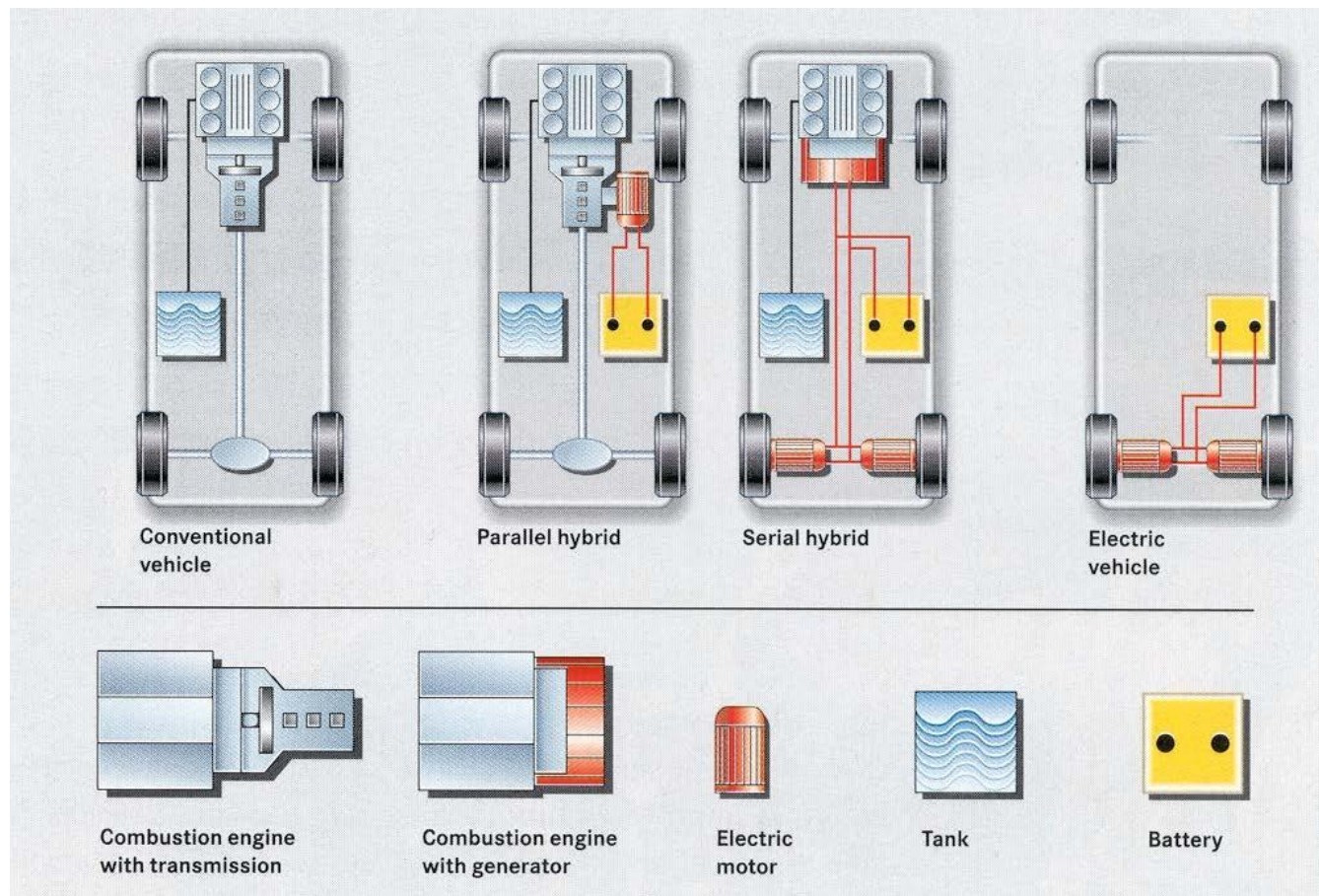
## Еколошке и енергетске предности хибридних технолог.



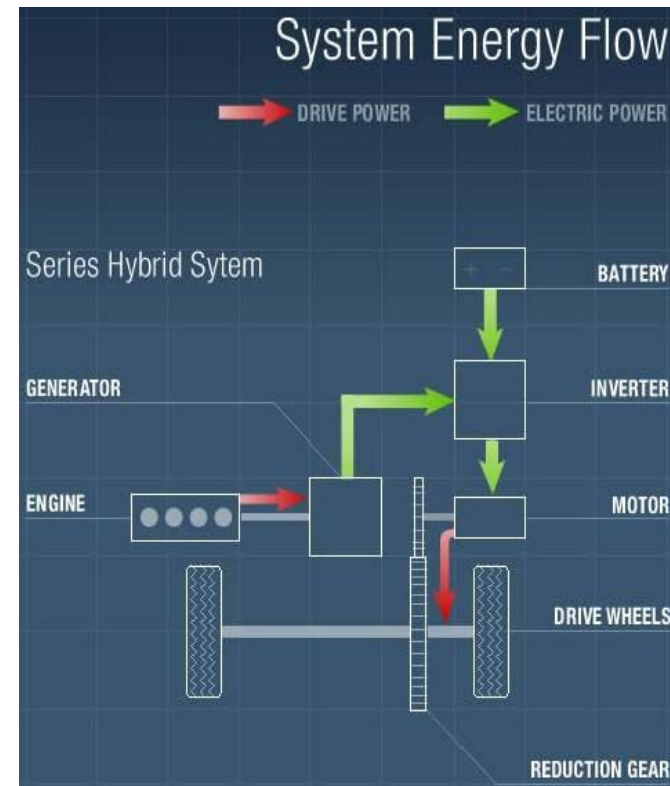
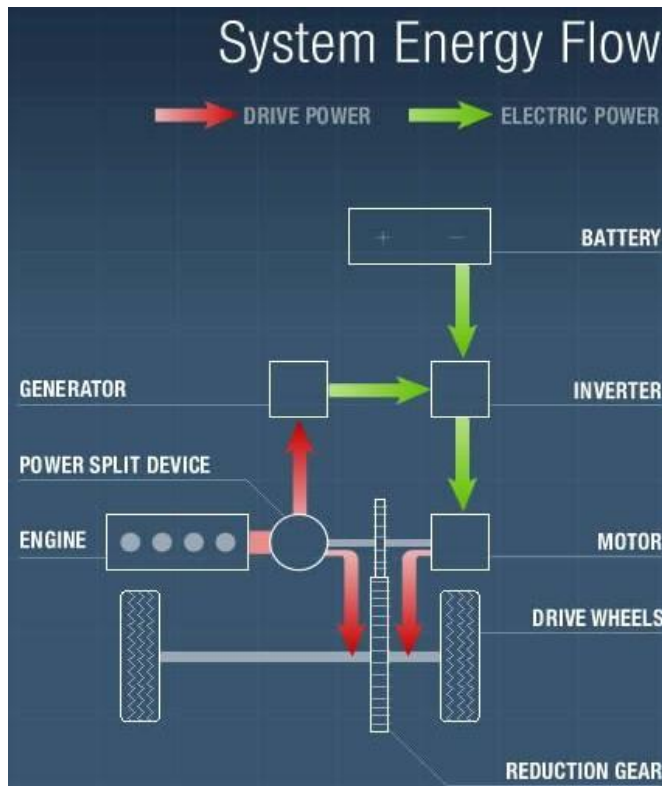
## Полугибриди (*mild hybrid vehicles*)



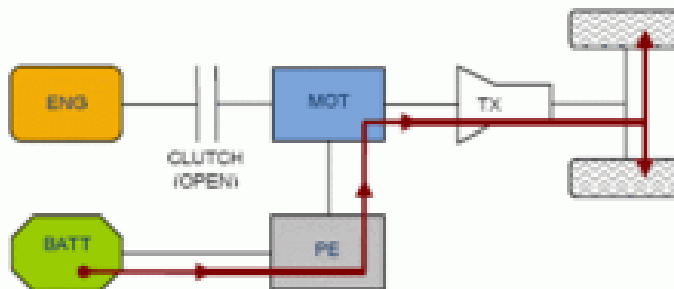
## Алтернативни погони – конфигурације



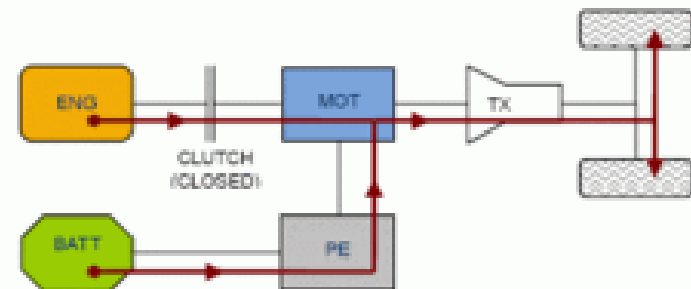
## Хибридна возила – паралелни и серијски хибриди



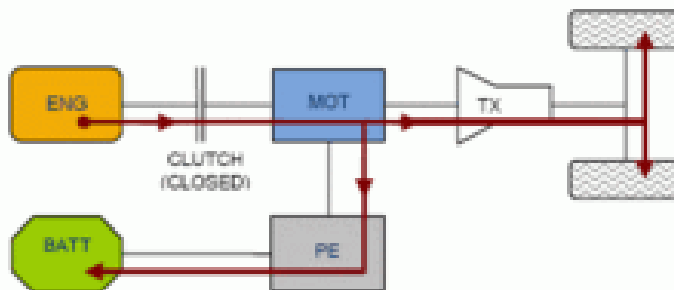
## Режими рада паралелних хибрида



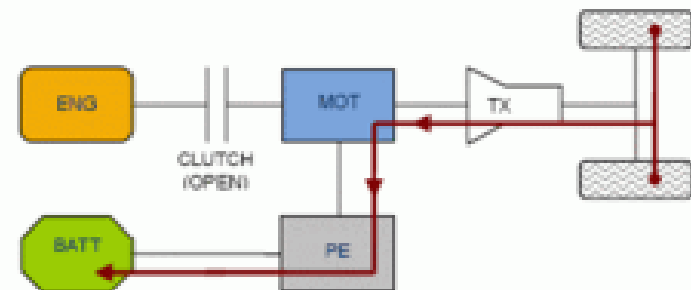
(a): electric only.



(b): hybrid / electric assist.

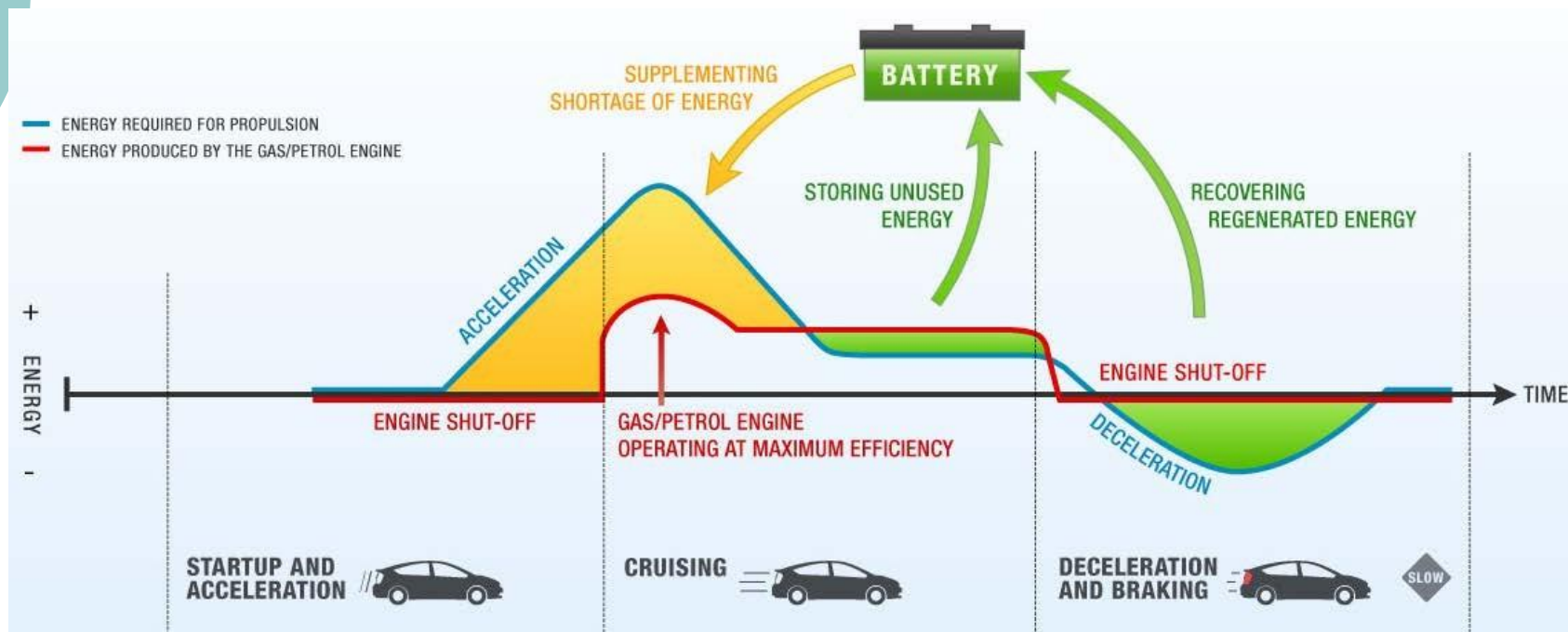


(c): battery charging.

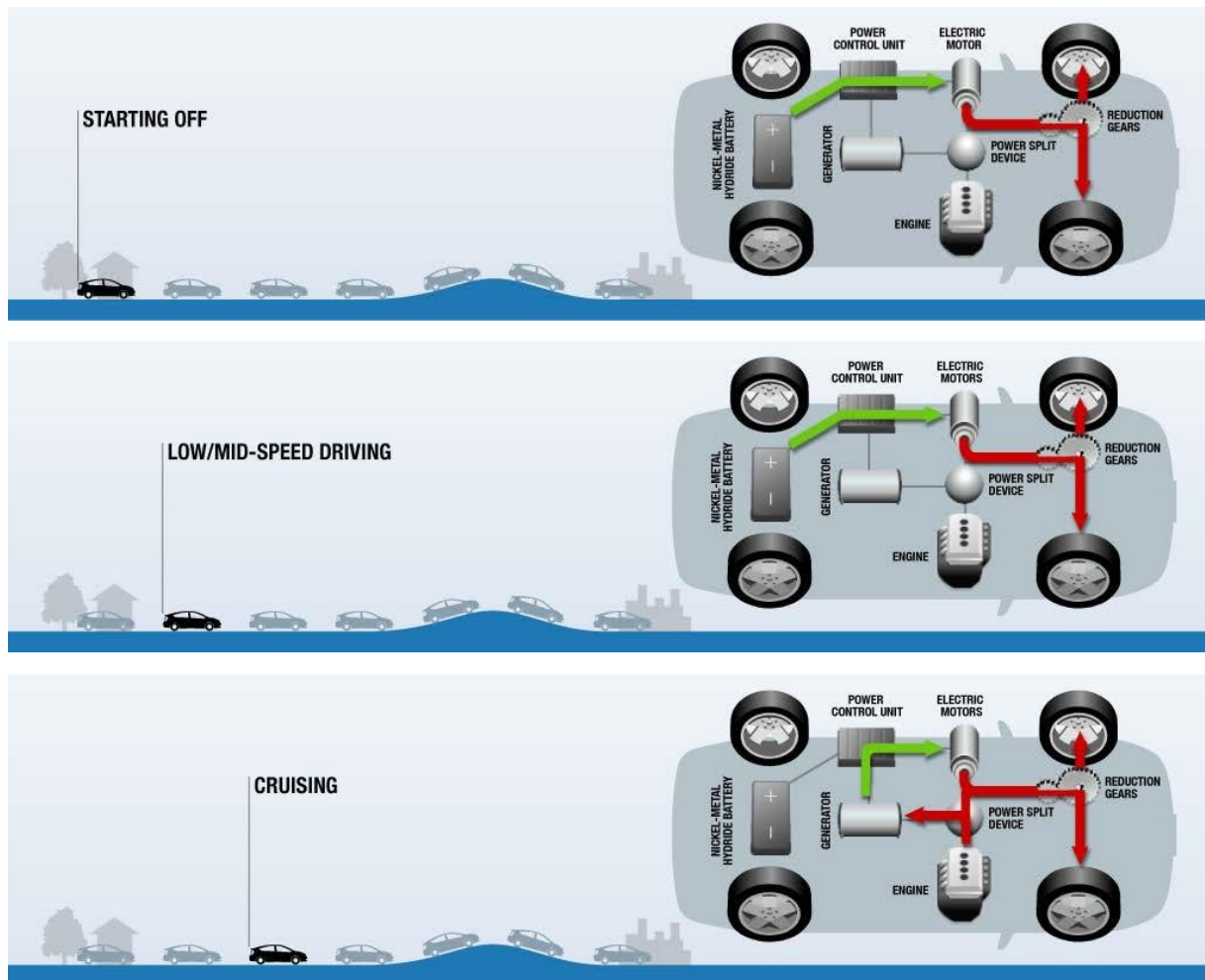


(d): regenerative braking.

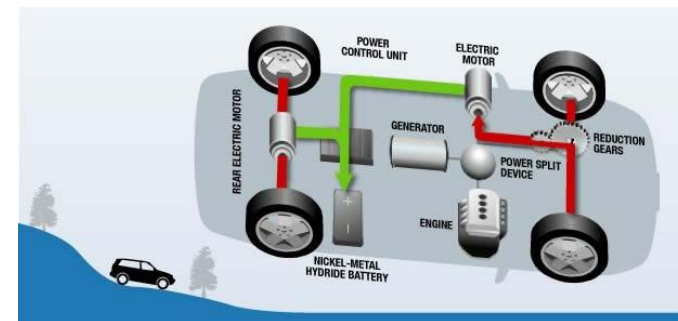
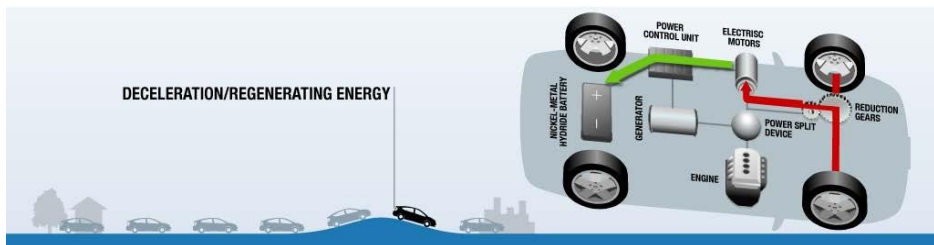
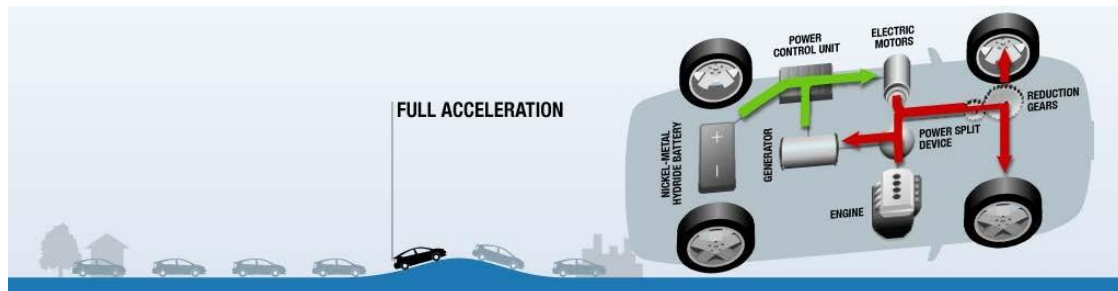
## Пуни хибриди (*full hybrid vehicles*) – принцип рада



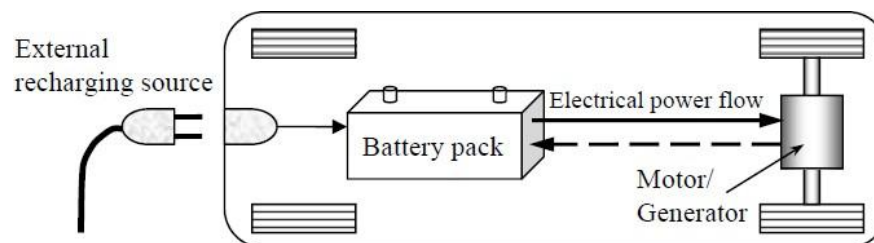
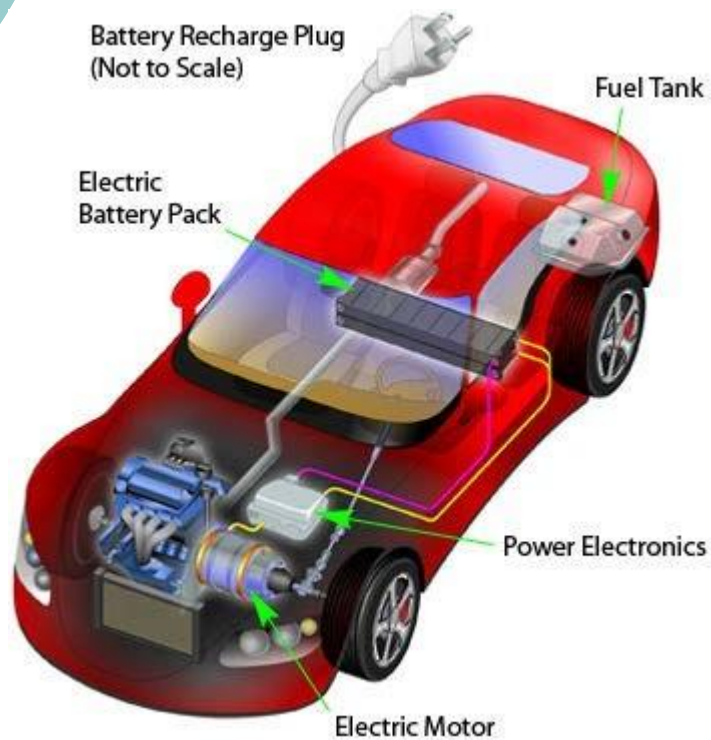
## Пуни хибриди (*full hybrid vehicles*) – режими рада (1)



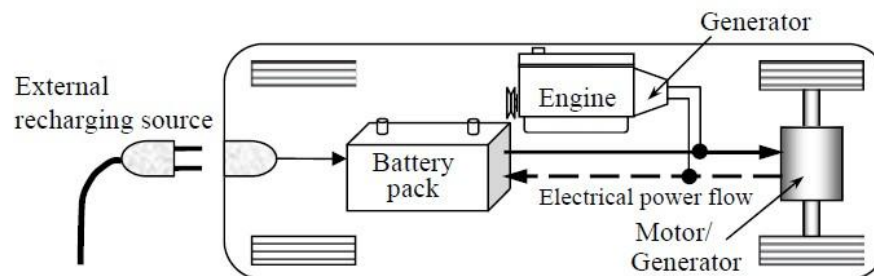
## Пуни хибриди (*full hybrid vehicles*) – режими рада (2)



## Plug-in електрични хибриди



(a) Plug-in electric vehicle



(b) Electric vehicle with range extender and plug-in facility