

**INDICTA**

de l'idée au marché



# MARINE RENEWABLE ENERGIES

**Innovative and alternative  
sources of funding  
for ocean energy**

**Dublin,  
11<sup>th</sup> June 2014**

**Antoine RABAIN**  
*Energy Department  
Director*

**INDICTA**  
✉ 18, rue Horace Vernet  
F 92136 ISSY les Mlx Cedex  
☎ 33 (0)1 55 57 09 00  
📠 33 (0)1 55 57 08 42  
📧 [contact@indicta.com](mailto:contact@indicta.com)

**Innovative and alternative sources of funding  
for ocean energy**

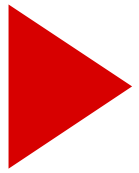
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INDICTA**



# CONTENTS



- INDICTA & scope of the intervention**
- Why do we need Marine Renewable Energy (MRE) ?**
  
- Key points in MRE & perspectives**
- Focus on 2 major economic issues**
  
- Some strategic & innovative levers to respond to these economic issues**
  - *Public finance*
  - *Crowdfunding*
  - *New mechanisms & breakthrough in economic models*
  
- ANNEX – A little more about INDICTA**



# INDICTA and MRE

*A convergence of energy and maritime economies*



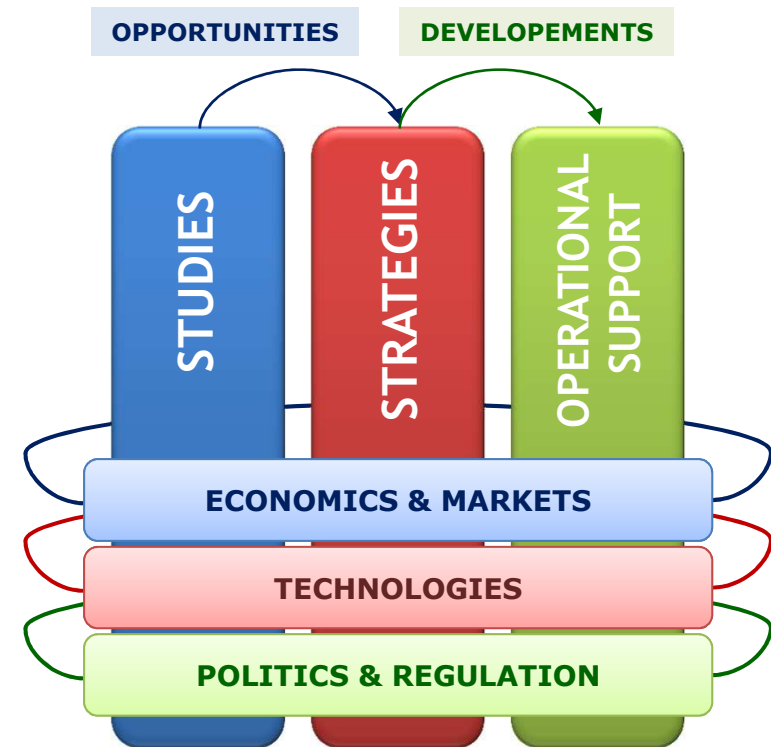
## STRATEGY CONSULTING AND OPERATIONAL SUPPORT

Over 6 years of analysis on issues of MRE development in France, Europe and worldwide ...

**... & more globally on {energy ; climate} issues**

### OUR CUSTOMERS :

- ❖ Industrials and major contractors
- ❖ Small/medium companies & start-ups
- ❖ Institutional players (clusters, public departments, regions, ...)

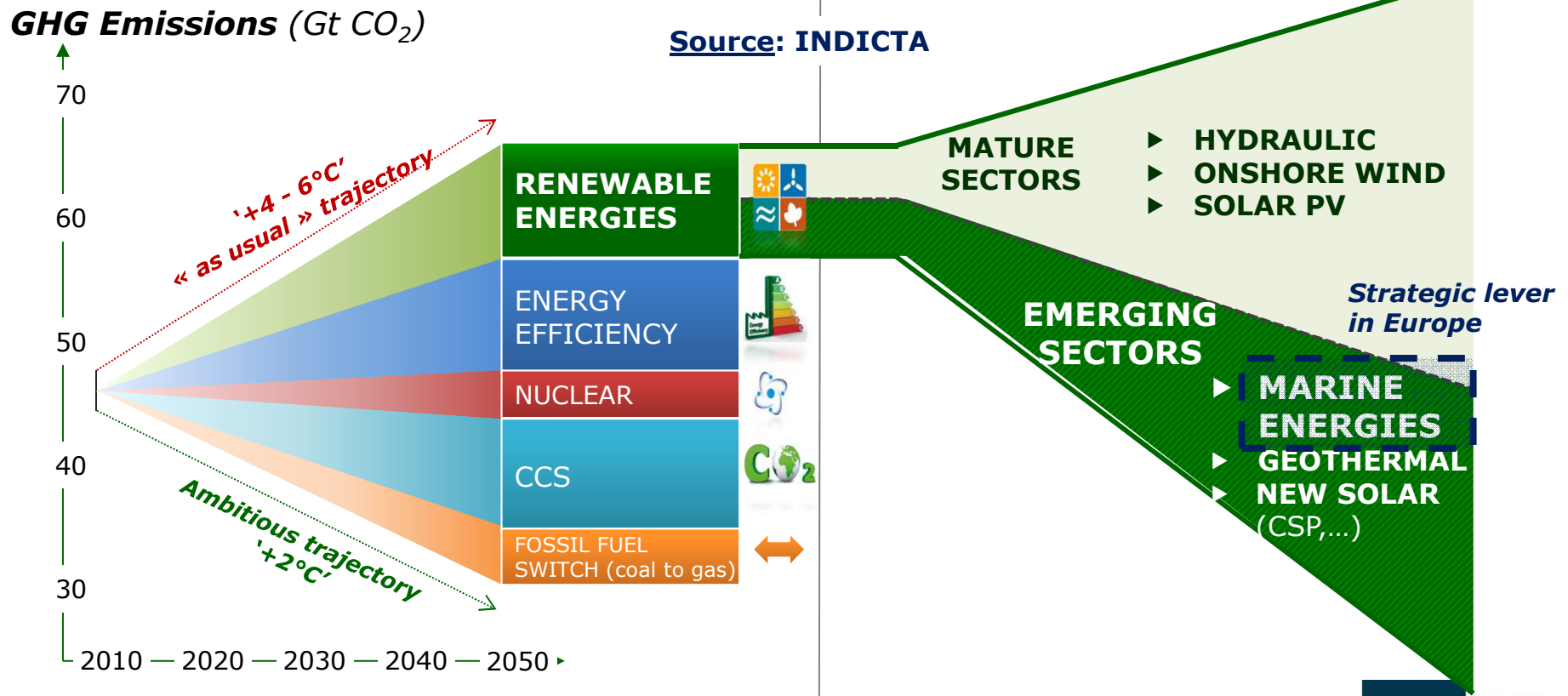




# From energy and climate issues ... to the potential response of MRE

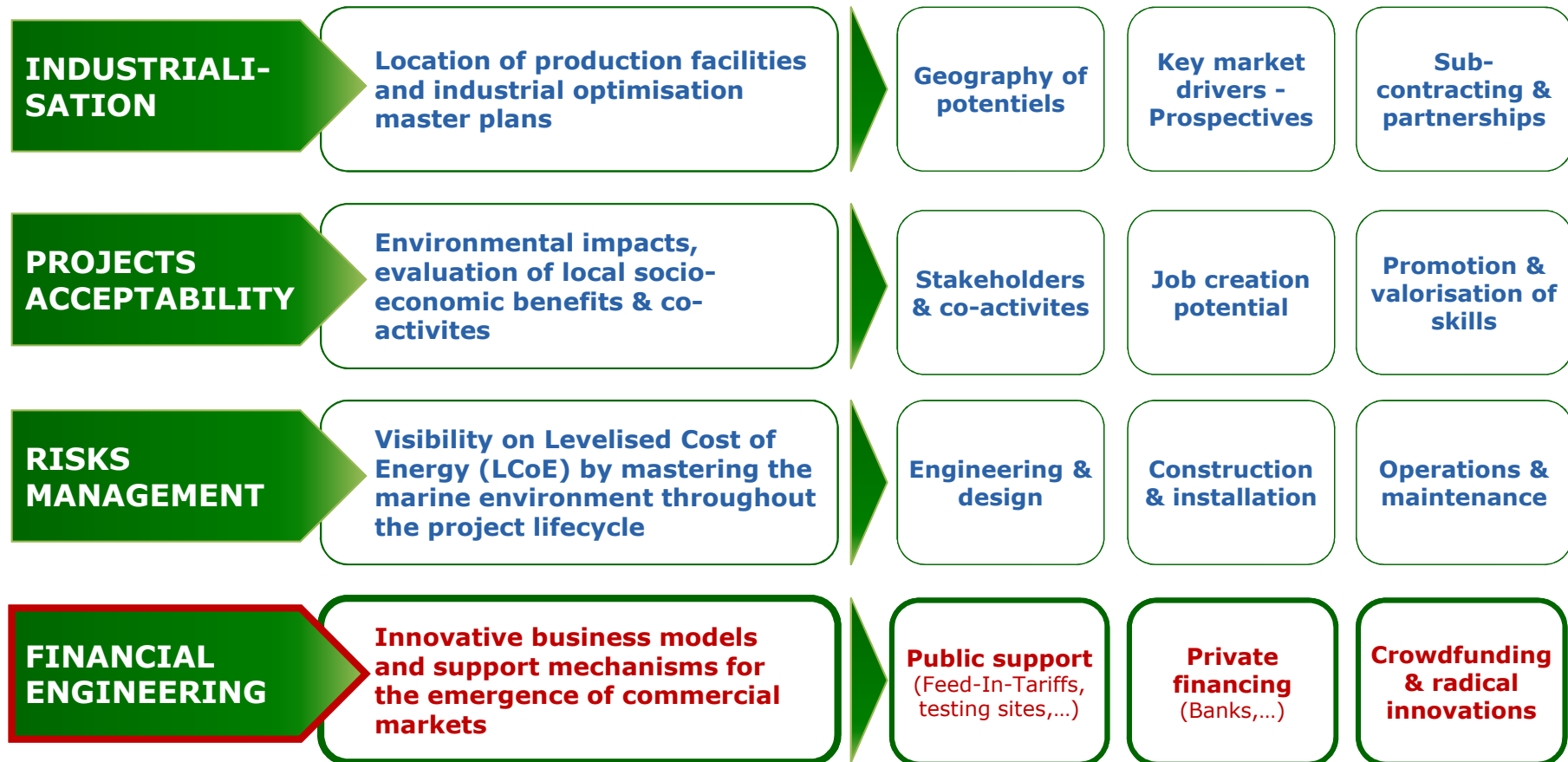
**ENERGY – CLIMATE ISSUE :  
RE AS KEY SOLUTION...**

**... CALLING FOR THE DEVELOPMENT  
OF NEW ENERGY SECTORS**





## Some of key issues we've covered since 2007 in MRE's markets





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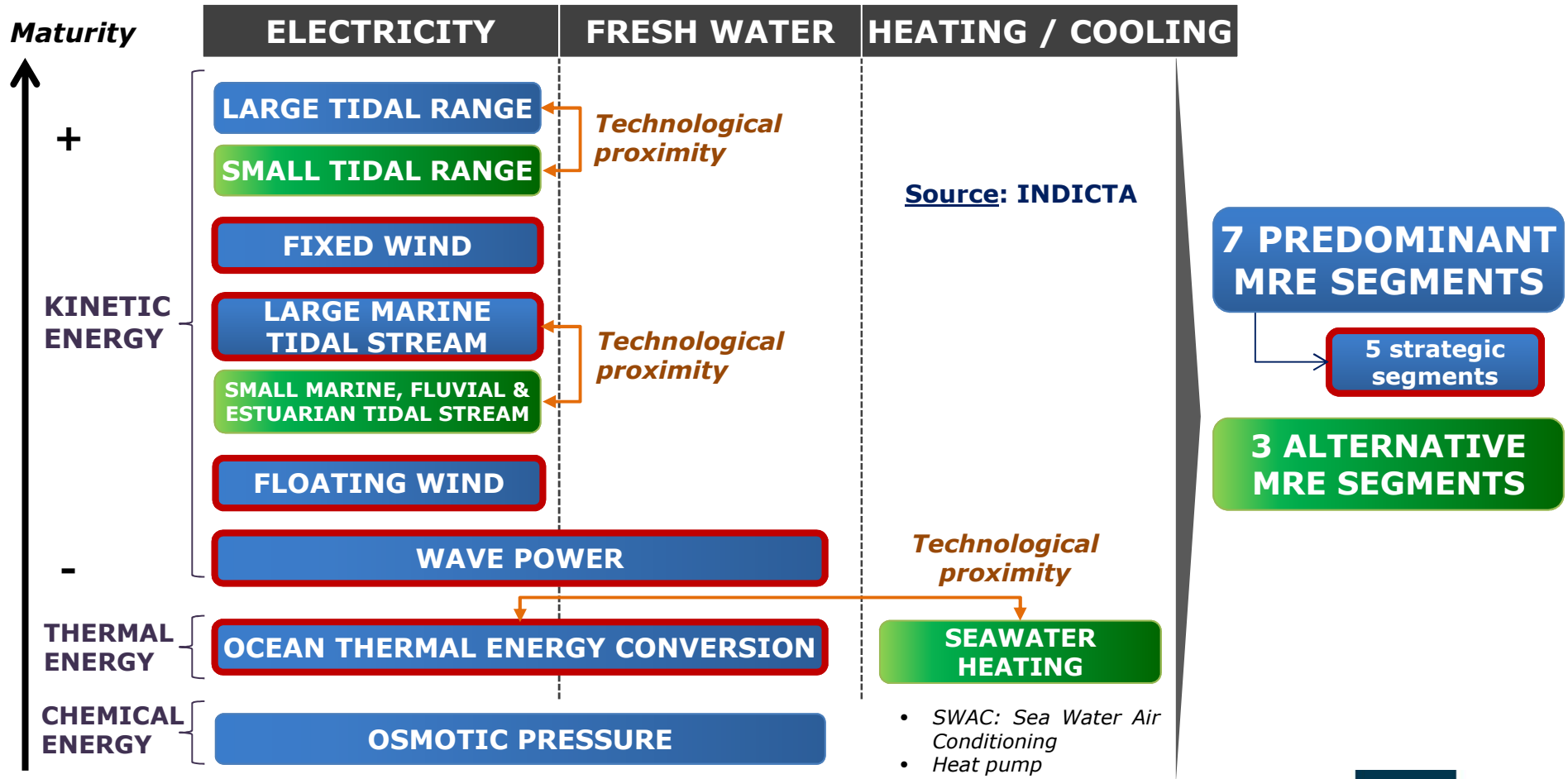
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# A multitude of MRE segments with a large scope of energy applications

## FIELD OF APPLICATION



**7 PREDOMINANT MRE SEGMENTS**

↳ **5 strategic segments**

**3 ALTERNATIVE MRE SEGMENTS**

**Legend**

Large scale energy production

Small scale energy production



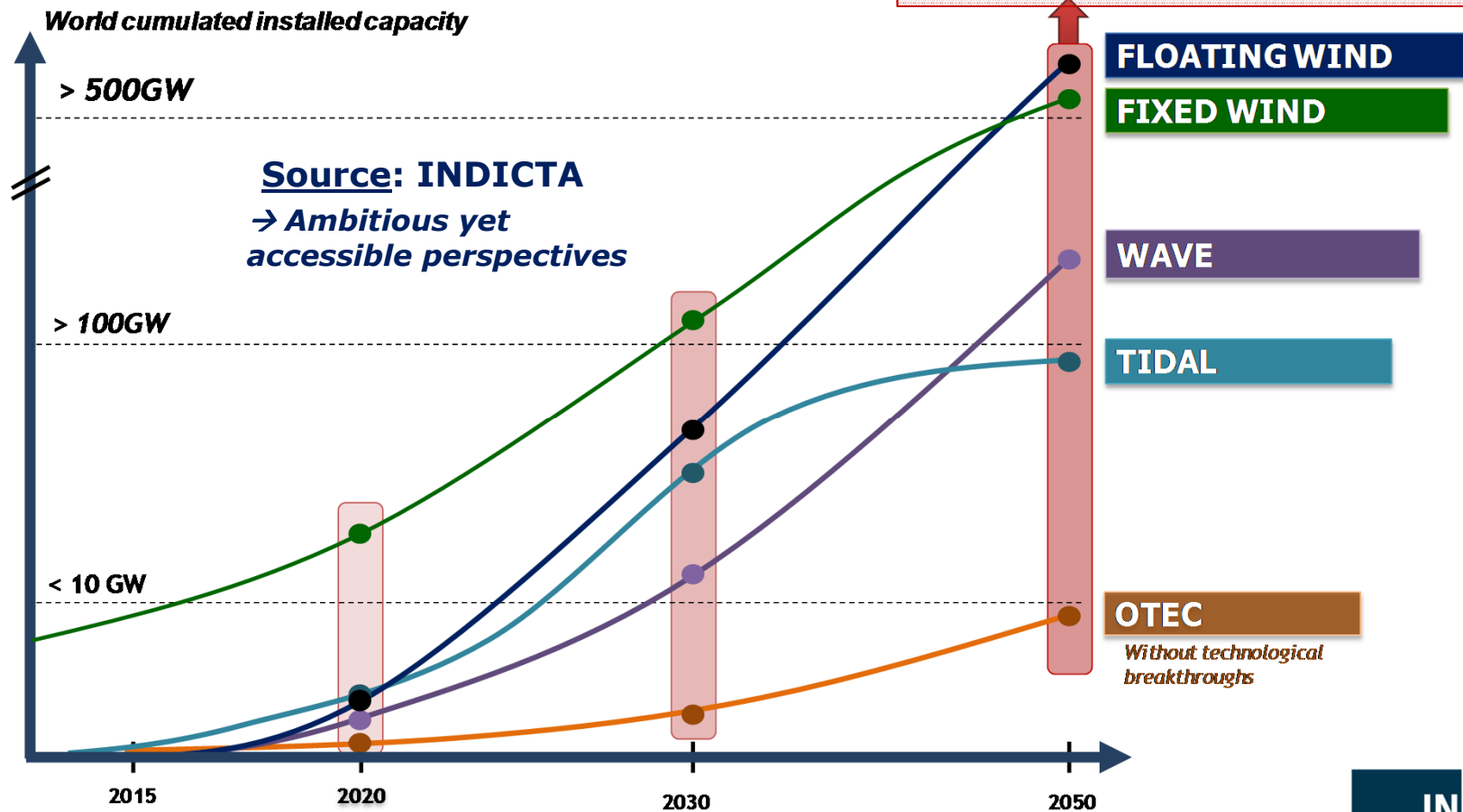
# INDICTA's voluntarist scenario for the 5 strategic MRE segments

*A major contribution potential to address the {energy ; climate} equation*

Worldwide technical potential :  $\approx$  20'000 TWh  
Equivalent to our world actual electricity consumption !



$\approx$  15 – 20% of global electricity mix by 2050







## First economic issue: securing the huge financial needs

*Several dozen of G€ to achieve CAPEX before 2020 in Europe only*

- ❑ Around 15 private banks finance  $\approx 80\%$  of project's CAPEX
- ❑ Tickets between 100 & 200 M€

### 2020 perspectives:

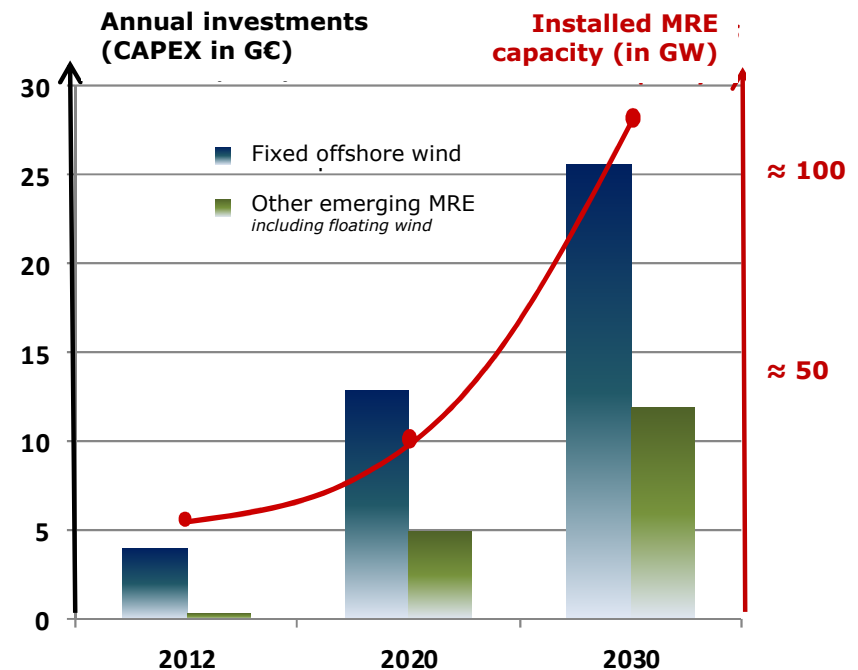
- 1G€ / bank / year
- From 5 to 10 tickets / year

### 2030 perspectives:

- 2G€ / bank / year
- From 10 to 20 tickets / year

## Worldwide prospective

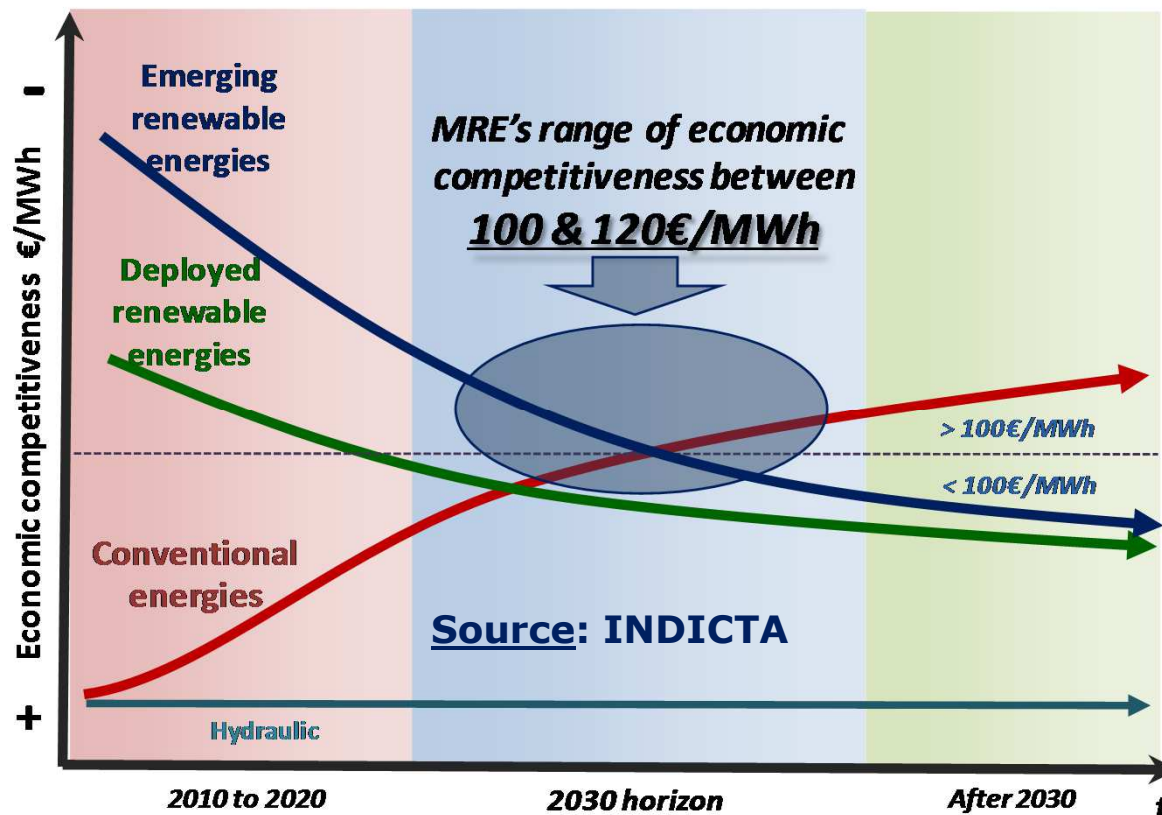
Source: INDICTA





## An other key issue: reinforcing economic competitiveness & social acceptability

*From 170 to 350 €/MWh today, towards a target cost range between 100 to 120 €/MWh around 2030 (except OTEC)*



### CRITICAL NEEDS IN:

#### ❖ **Planification**

- ▶ **Visibility** on local industrial load
- ▶ **Economies of scale** and **export potential**

#### ❖ **New marine operations**

- ▶ **Service models**
- ▶ Industrial **logistics & ports**

#### ❖ **Public support**

- ▶ **R&D** & technological innovation
- ▶ **Smart grids**, energy **storage**,...

#### ❖ **Financial engineering & innovations**

- ▶ Project **risks** management
- ▶ **New economic models** (public finance, crowdfunding,...) & **breakthrough innovations** with other markets (electric mobility,...)



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- ❑ **Some strategic & innovative levers to respond to these economic issues**

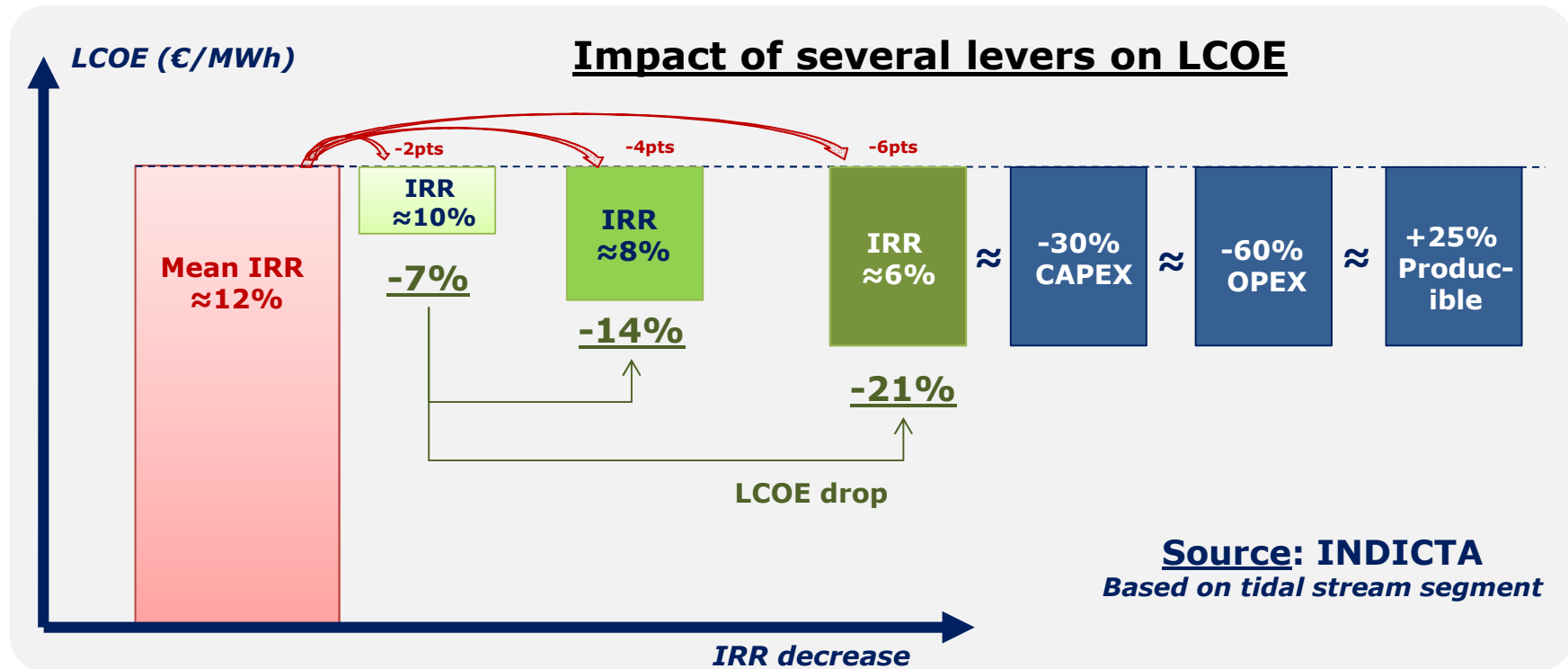
- *Public finance*
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# Public finance & Internal Rate of Return (IRR)

*An immediate and effective lever to drop LCOE*

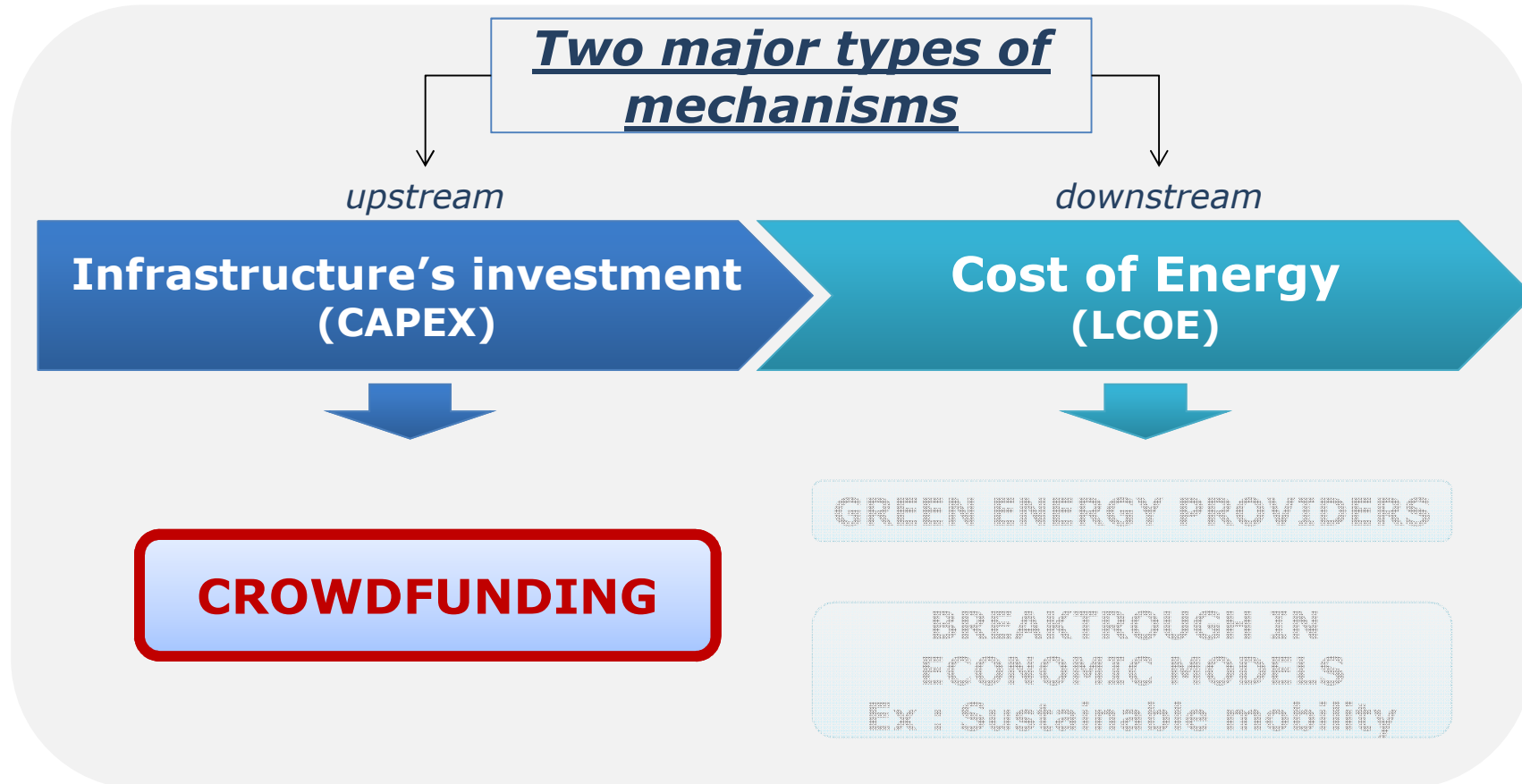


The use of public banks for CAPEX funding could help decrease rapidly and significantly usual IRR rate



## Crowdfunding & new models

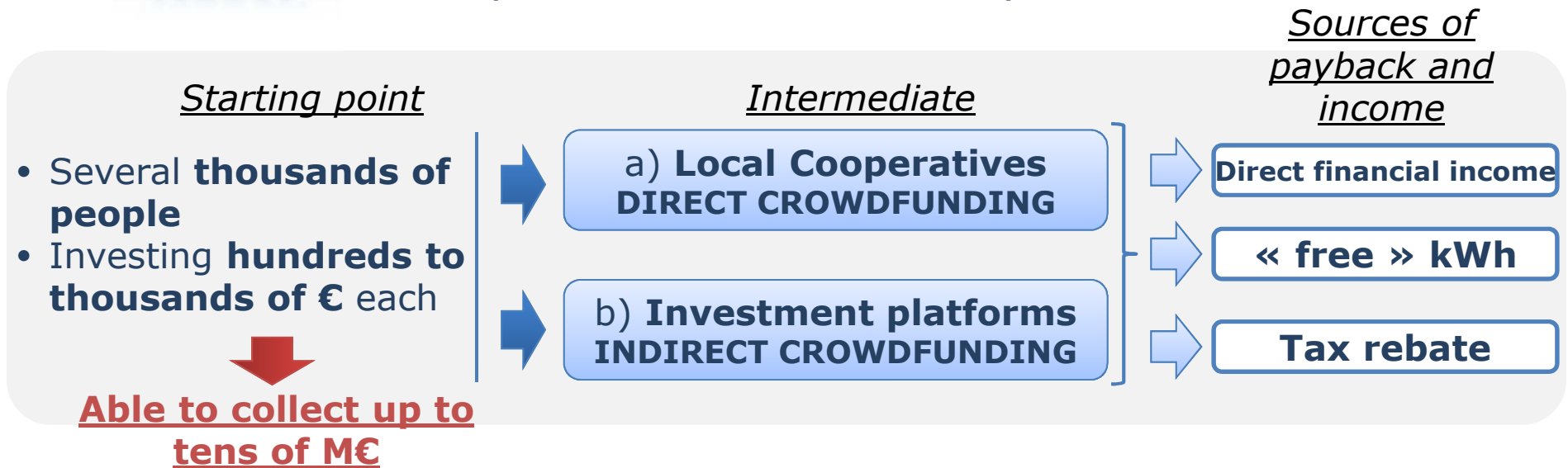
*A wide range of innovations throughout the value chain to improve social acceptability & economic attractiveness of MRE*



# ▶ Crowdfunding, a multi-benefit tool



- ▶ **A new source of project funding** (vs. funds availability issues)
- ▶ **A social acceptability improver** (vs. NIMBY syndrome)
- ▶ **An interesting source of income for people** (vs. "traditional" investments)





## Key example on direct crowdfunding

*Middelgrunden project (mid 90's) -  
Denmark*



*Local single project*



**Total ROI  $\approx$ 3,5%/y**  
(on 20 years)

*Close to "traditional" investment, like life insurance*

PROS	CONS
<ul style="list-style-type: none"> <li>Great improvement on social acceptability due to local structure</li> </ul>	<ul style="list-style-type: none"> <li>Limited financing capacity due to a restrained number of funders</li> </ul>



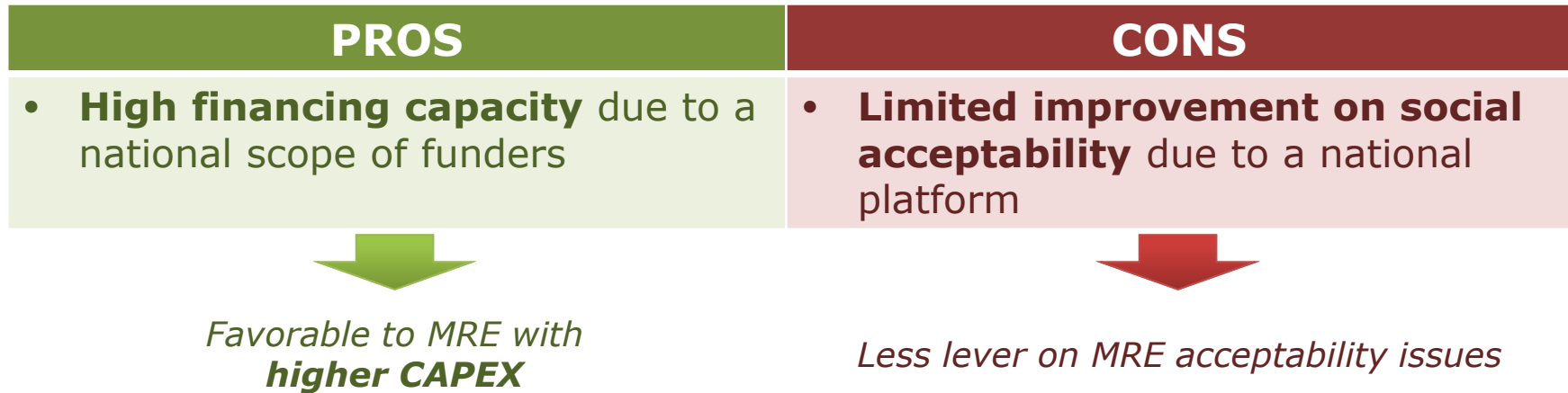
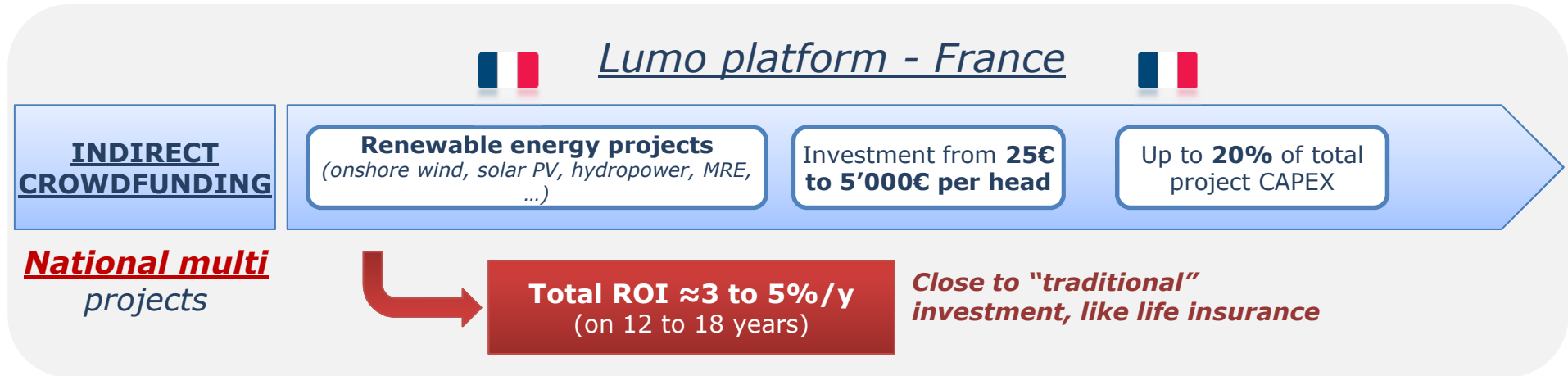
*Favorable to MRE due to specific & large acceptability issues*



*Unfavorable to certain MRE due to higher CAPEX (>2G€ with share price > 100M€)*



## Key example on indirect crowdfunding

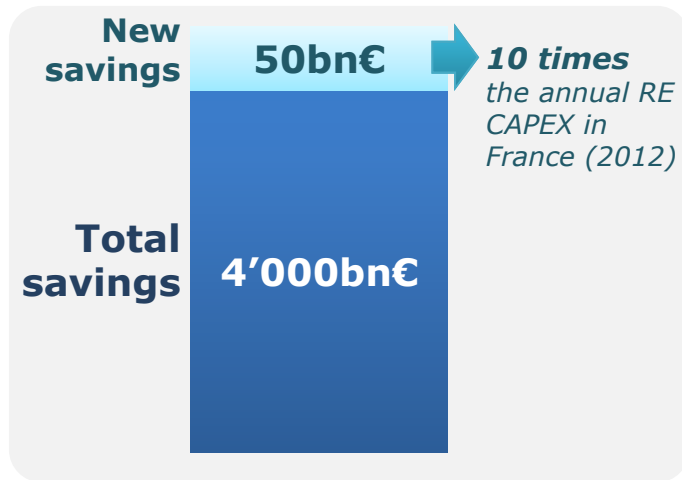






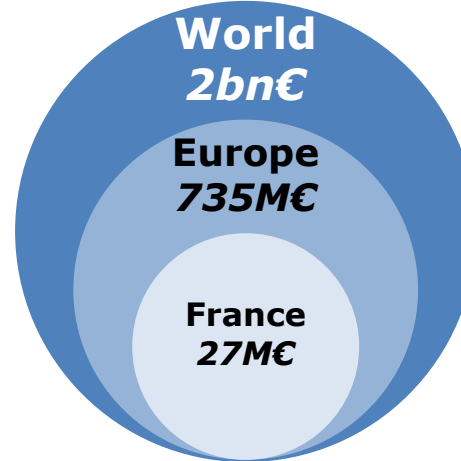
# Crowdfunding, a big potential tool for financing MRE's CAPEX

## French savings in 2012



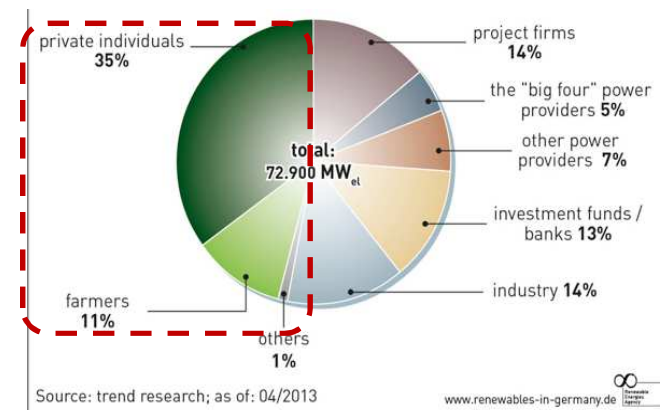
Source : Observatoire des marchés de l'épargne et du crédit

## Annual crowdfunding in 2012



Source : Massolution

Almost **half** of Germany's RE capacity currently owned by citizens and farmers (≈33,5GW)



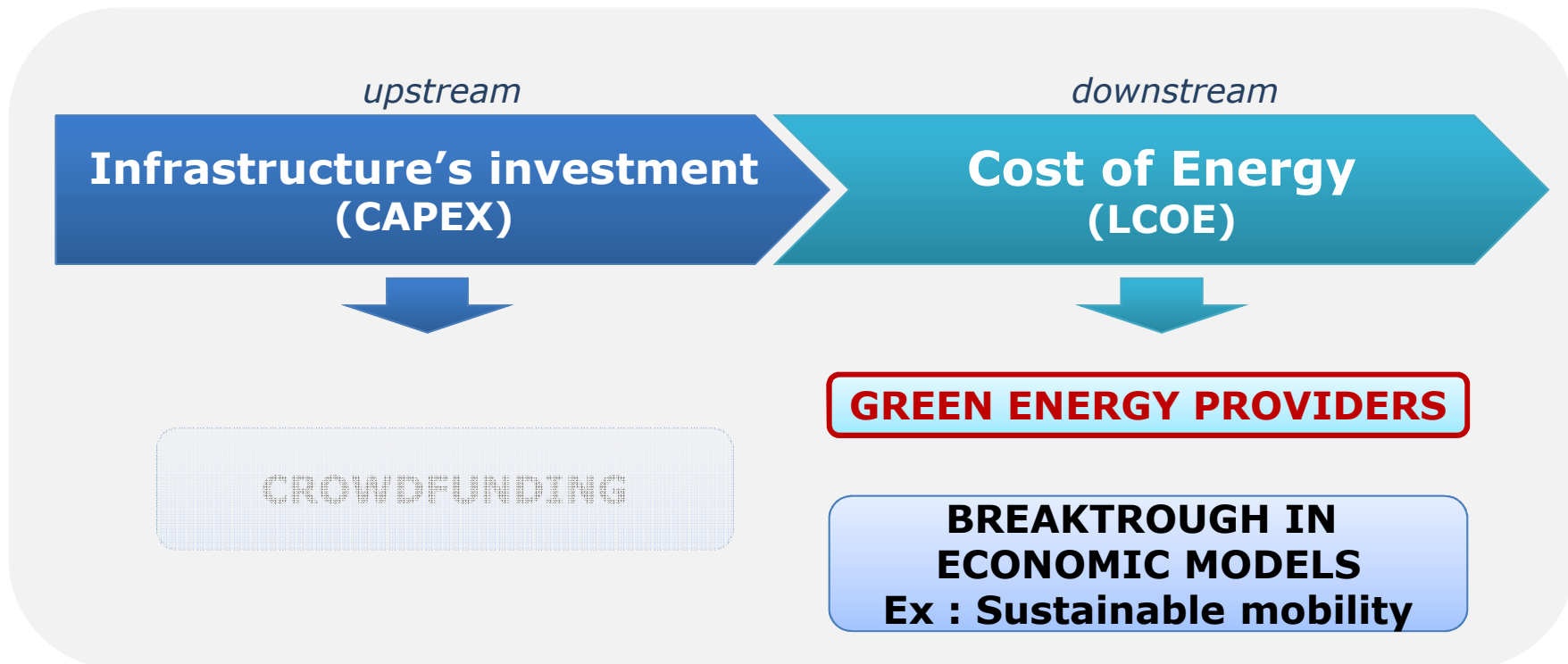
**Objective : find the good balance between local/national scope mechanisms to satisfy levels of CAPEX of projects**

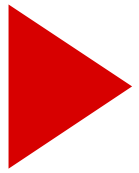
Main crowdfunding countries : *a European lead*



# ▶ Innovations on downstream mechanisms

## Two more major types of downstream mechanisms





# Green energy providers, from virtual to effective mechanisms

**GREEN ENERGY PROVIDER**



A consumers involvement and then a better awareness of costs of energy

*Starting point*

People :

- concerned about **energy and climate issues**
- willing to **pay more** to consume 100% guaranteed renewable energy

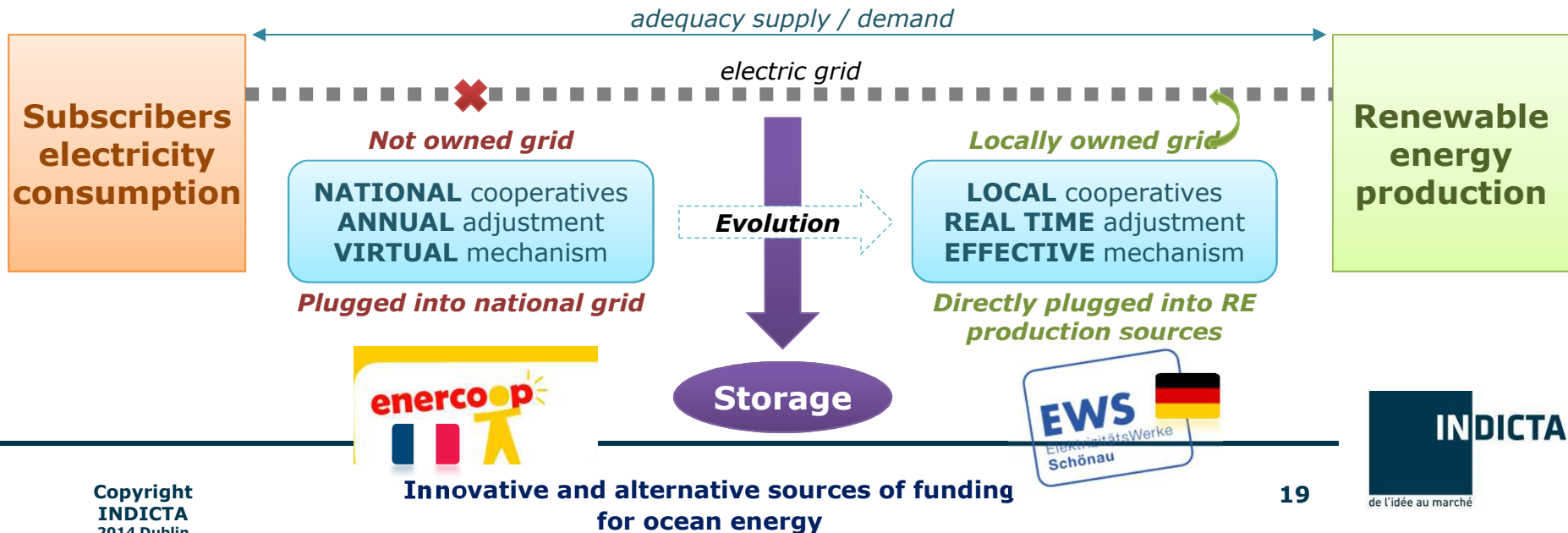
*Intermediate*



a) **NATIONAL cooperatives**

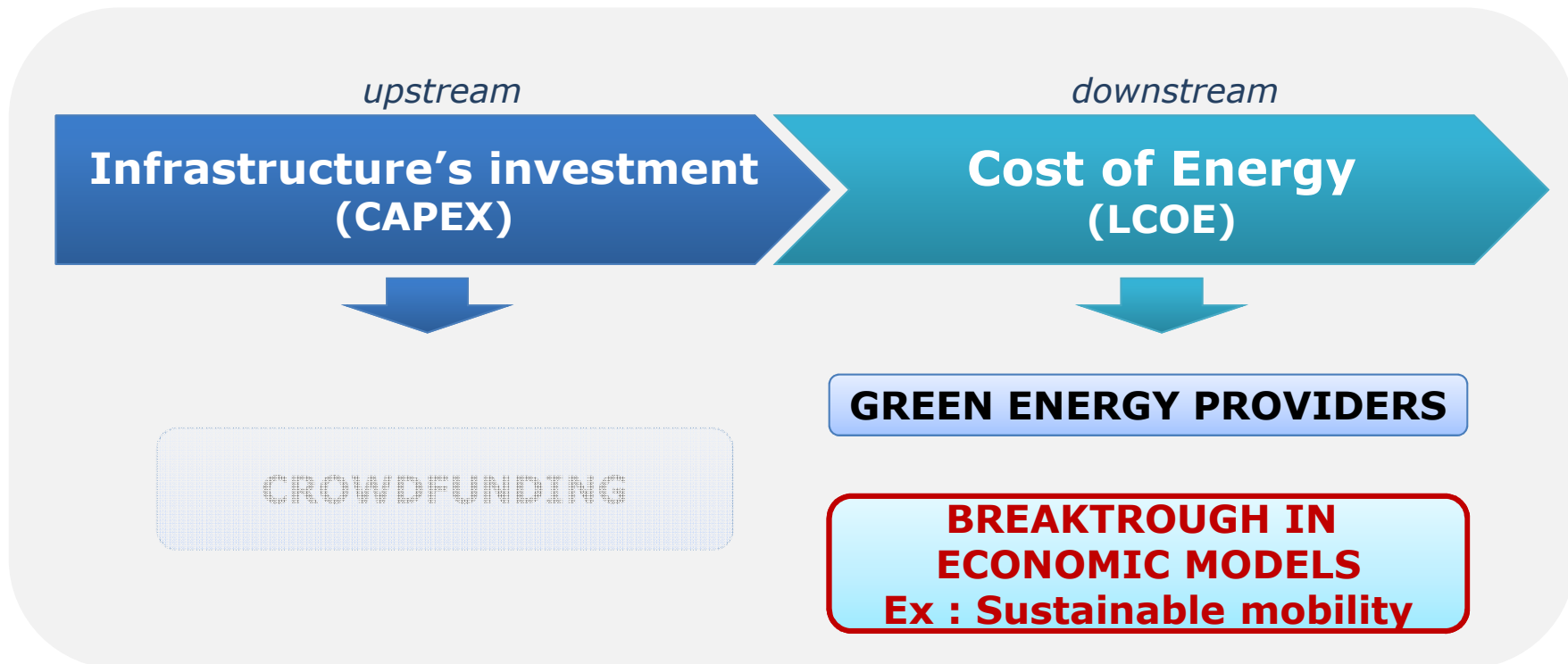


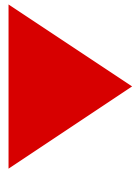
b) **LOCAL cooperatives**



# ▶ Innovations on downstream mechanisms

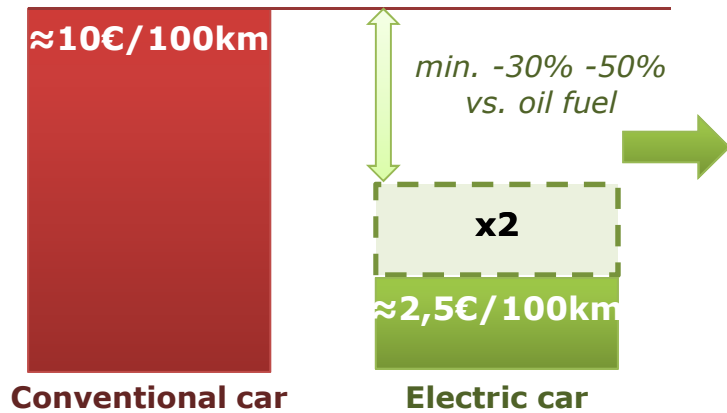
## Two more major types of downstream mechanisms





# Sustainable mobility, a breakthrough model

**SUSTAINABLE  
MOBILITY**



Innovative offers, **still competitive with conventional car**, where « green drivers » can **pay more to fuel their electric cars** in order to develop and invest in :

- **RE energy capacity**
  - **Electric cars industry**
- Coupling local developments*



**OPEX ONLY**

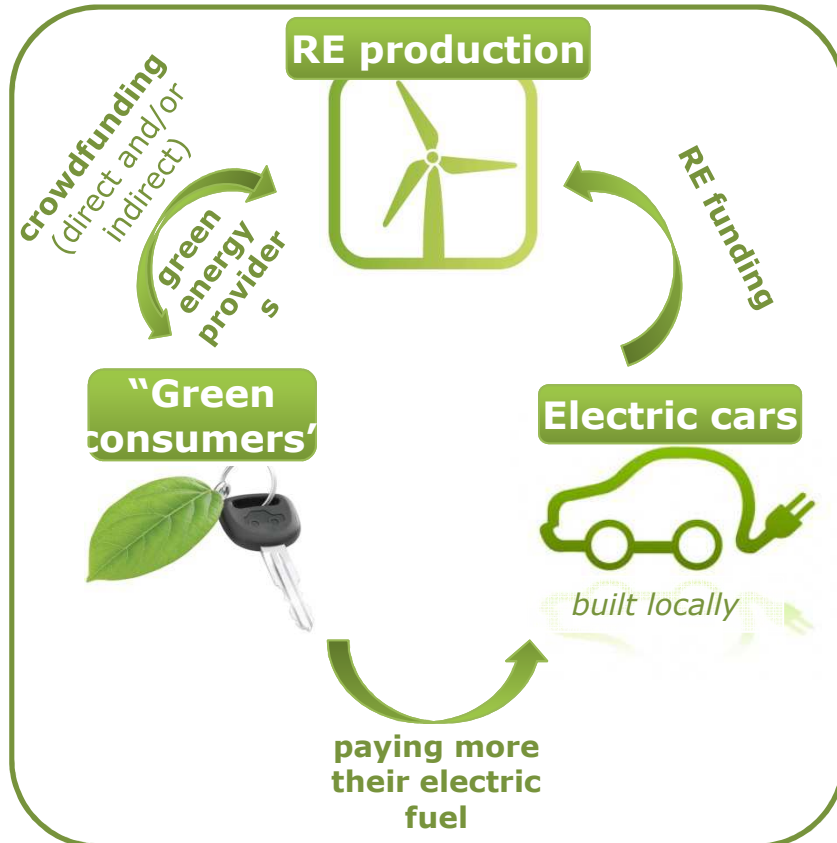
**Coupling the development for RE energy and electric cars could support the financing challenge of MRE and maximize the lever on social acceptability**



# CONCLUSION

## *Green ecosystem: towards a virtuous circle ?*

### Green ecosystem



Creation of a **green ecosystem** involving green consumers funding RE by:

- investing in RE production capacity with **crowdfunding** (direct and/or indirect mechanisms)
- **green energy providers**
- **electric cars** and more generally **innovative offers**

→ **with local socioeconomic benefits**

→ **& economic attractiveness**



# THANK YOU FOR YOUR ATTENTION

**Antoine RABAIN**

*Energy Department Director*  
INDICTA

[antoine.rabain@indicta.com](mailto:antoine.rabain@indicta.com)

18, rue Horace Vernet  
92136 Issy-Les-Moulineaux Cedex  
tél: +33 (0)1-55-57-19-52  
<http://www.indicta.com>



*"A chaque fois que nous nous sommes tournés vers l'océan, notre région a connu de longues périodes de prospérité."*

*"Every time we turned towards the ocean, our region has experienced long periods of prosperity."*

Alexis GOUVERNNEC (1936 – 2007)  
Brittany - FRANCE



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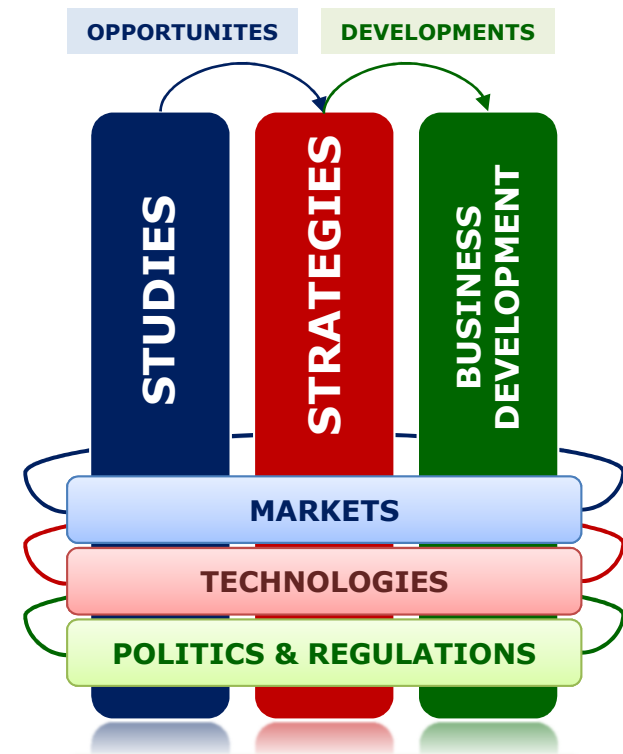
## POSITIONING

- ▶ Consulting firm specialised in **economic studies**, **strategic consulting** & **business development**
- ▶ Specialised in transforming commercial markets and emerging markets, spécialisée dans les filières structurées en **transformation** et les **marchés émergents** with high technological and innovation dimensions
- ▶ In **complex** and **international** environments

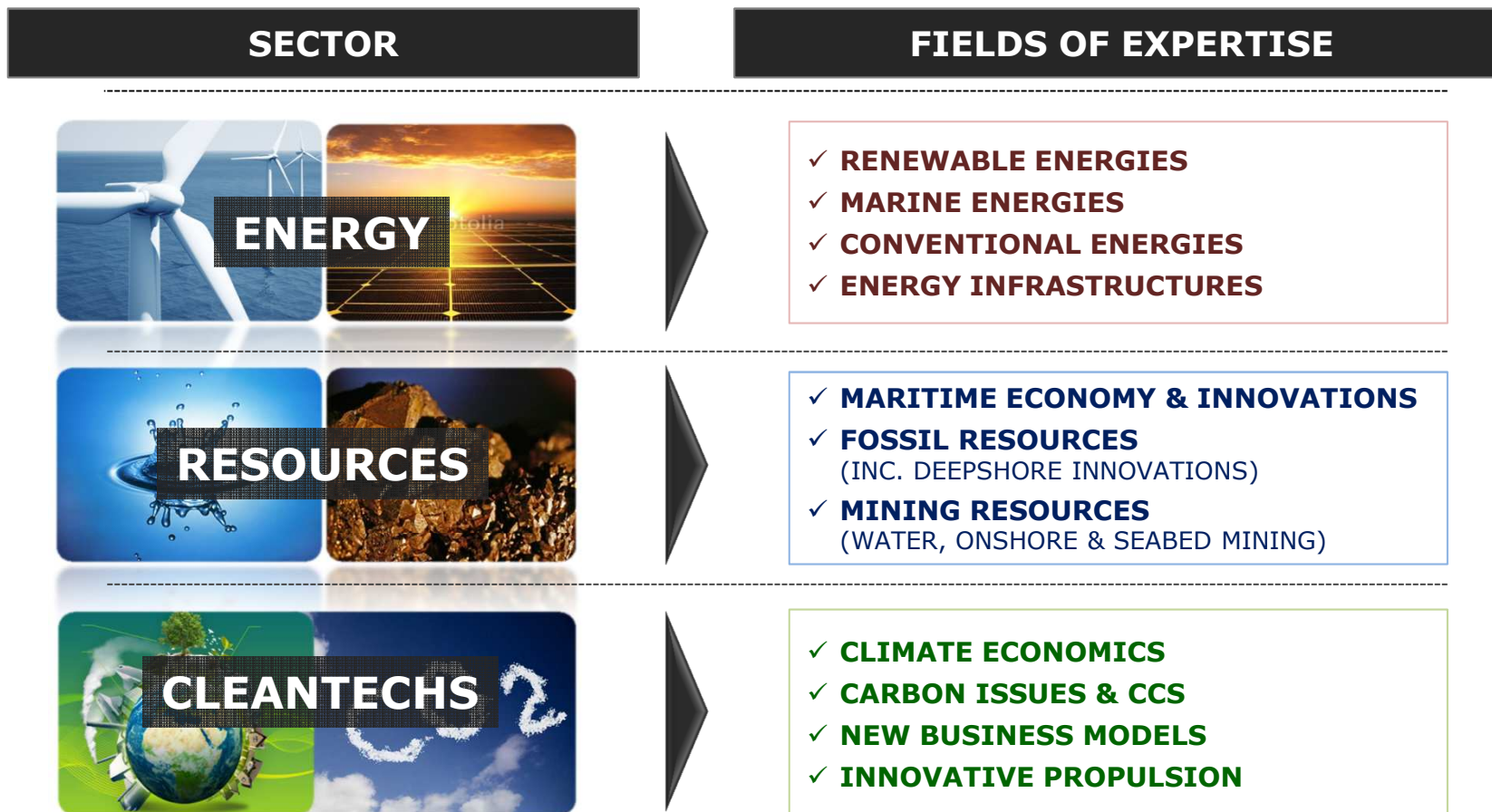
## ROLE

Support **strategic growth** & **opportunity** detection, implement **development strategies & projetscs**

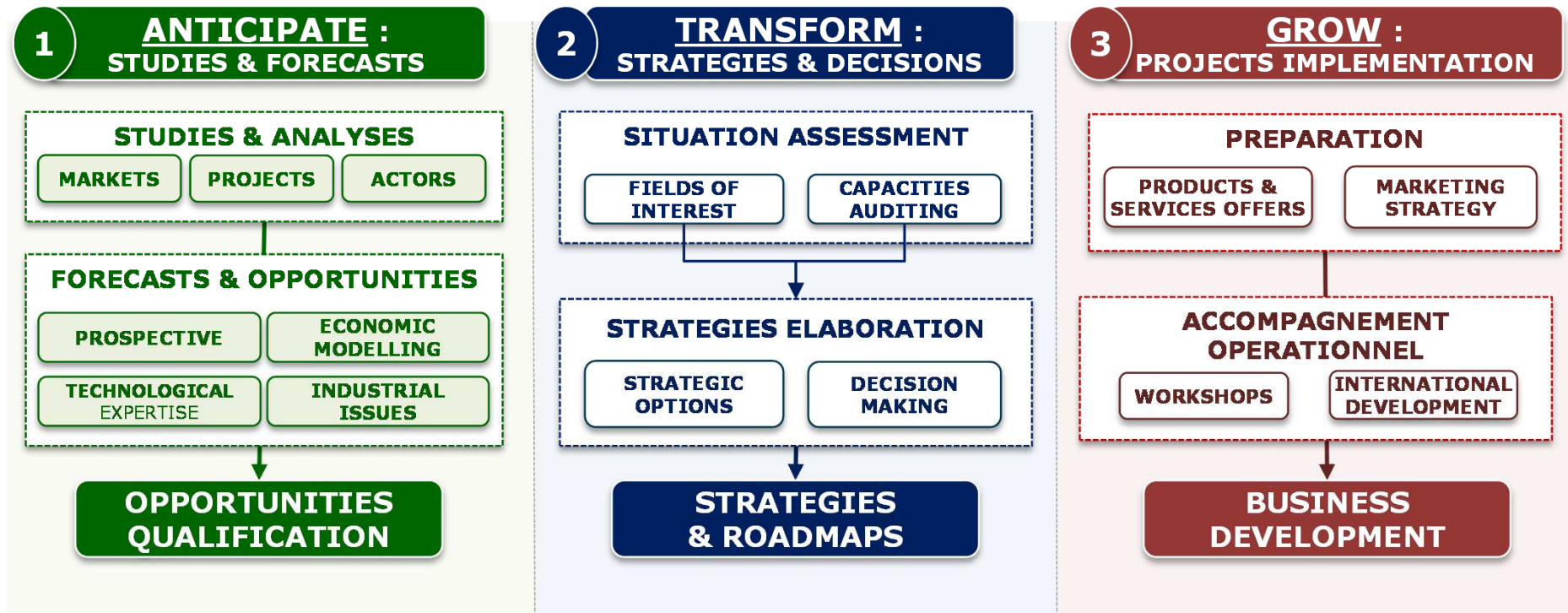
- ▶ **Understand & anticipate the issue in the business environment**
- ▶ **Define & document strategies to establish roadmaps**
- ▶ **Support the implementation of operational projects and business development actions**

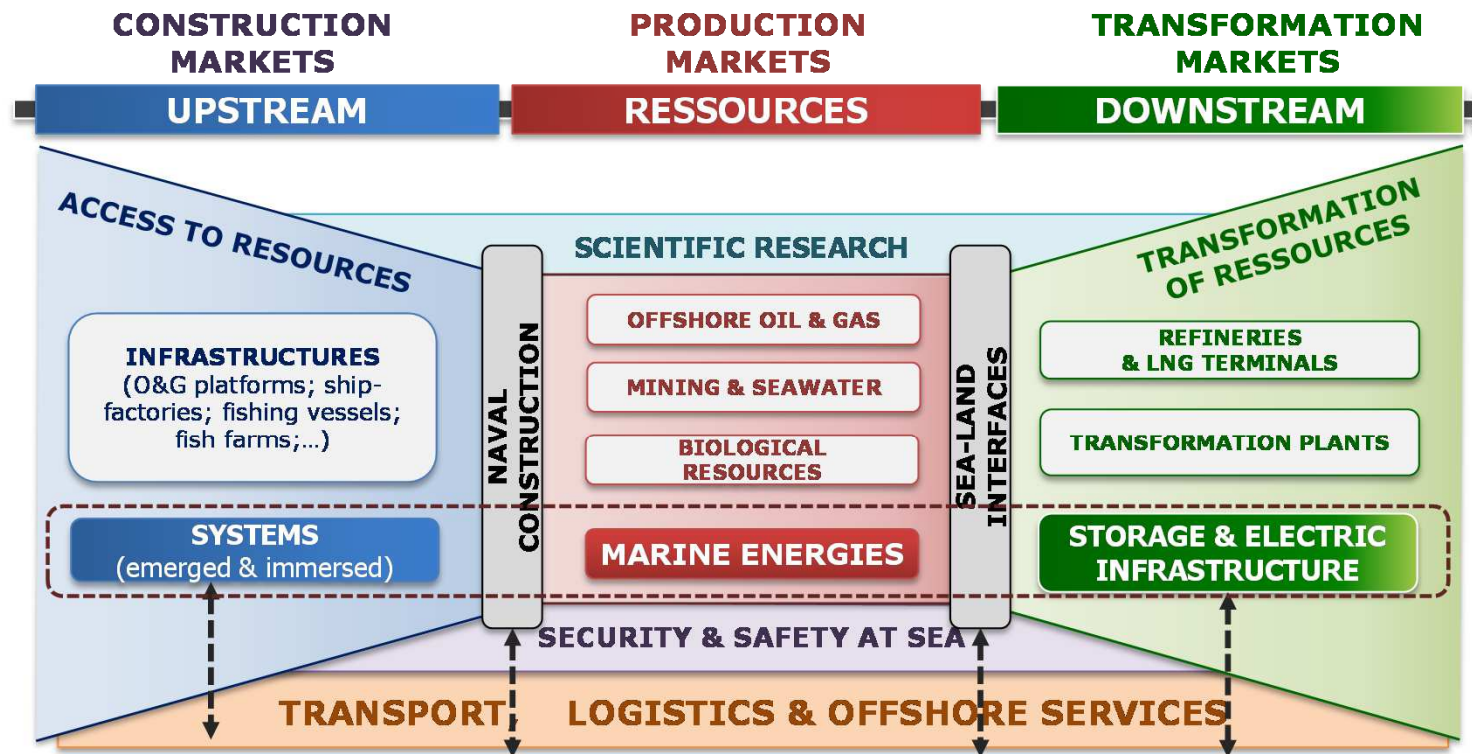


## A RECOGNISED EXPERIENCE ON 3 CLOSELY RELATED SECTORS: ENERGY ; RESOURCES ; CLEANTECHS



## OUR CONSULTING SERVICES 3 OFFER LEVELS DEPENDING ON THE SITUATION OF YOUR NEEDS





- ◎ **Emerging MRE markets with high growth potential**
- ◎ MRE markets at the **crossroads of marine issues**:
  - **Interactions** with marine transport and logistics activities, offshore services, scientific research, oceanography,...
  - **Synergies** and **mutualisations** are possible with aquaculture, algae culture, desalinisation,...





CONTACT US, SO WE CAN GO FURTHER TOGETHER ...



## Antoine RABAIN

*Director of the Energy, Resources & Cleantech practice*

✉ [antoine.rabain@indicta.com](mailto:antoine.rabain@indicta.com)

☎ +33 (0)1-55-57-19-52