

## TPWind General Assembly 12 & 13th February 2008 Finance Working Group (FWG)

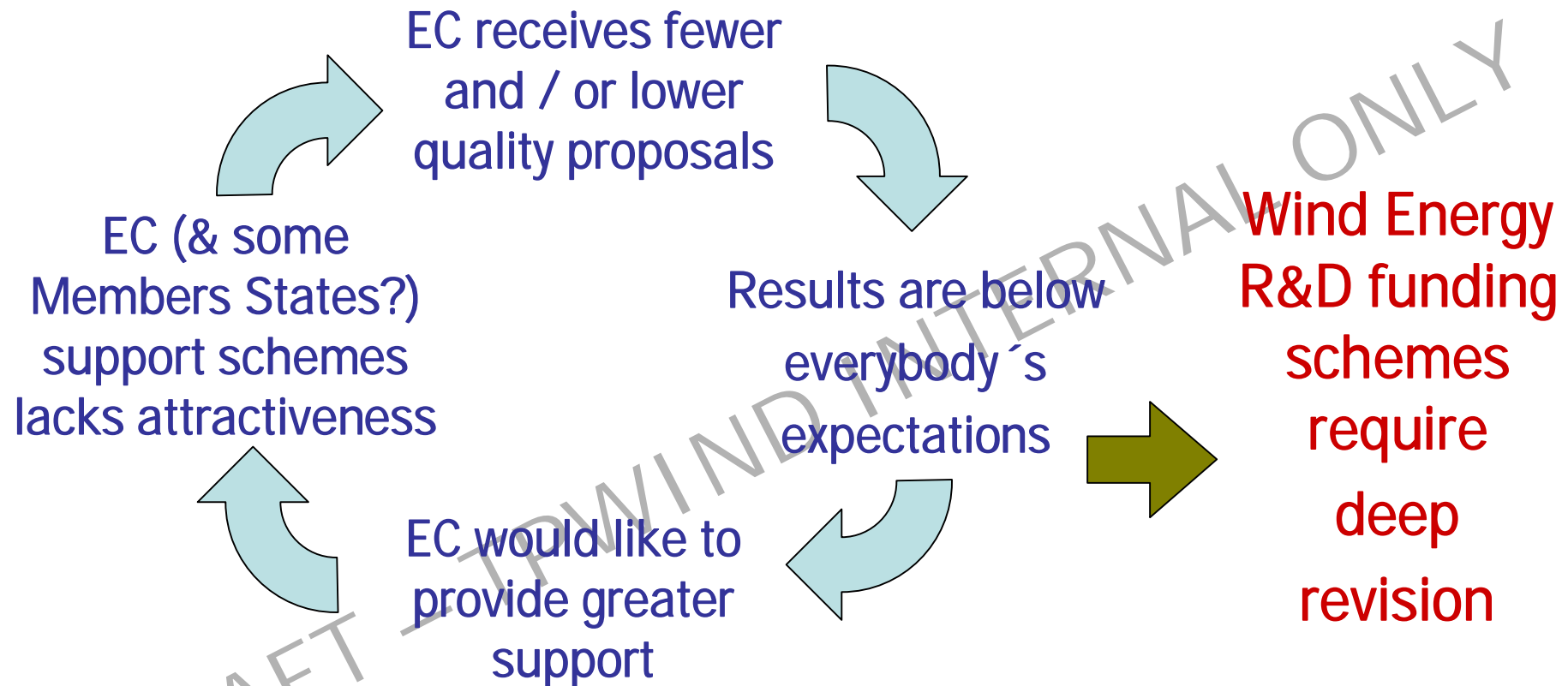
# Finance Working Group (FWG)

Mauro Villanueva-Monzón

FWG chairman, Steering Committee member

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## 0. Current situation assessment



All stakeholders stranded in a frustrating 'Lose-Lose'

## 1. Exogenous challenges (I)

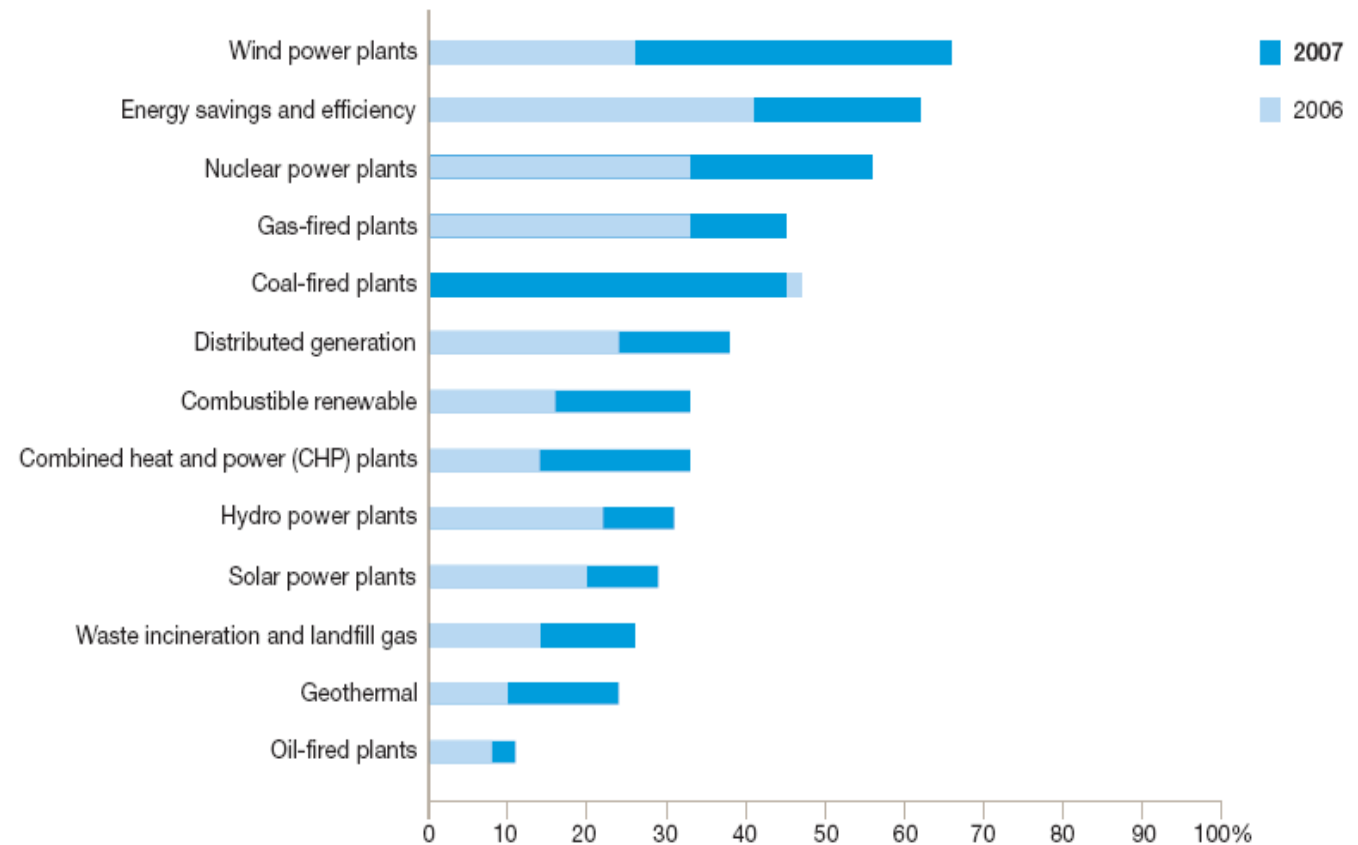
- q Increment R&D funding level to the desired (Lisbon complaint). This implies a sevenfold increase for the EC in the case of Wind Energy.
- q Use public R&D funding to gradually leverage private funding (Barcelona & Lisbon objectives)
- q Migrate towards more streamlined, agile, simpler, private-type funding management schemes.
- q Maximize the R&D results usage, disminishing the “European paradox”.
- q Pursue European Technological leadership to counteract manufacturing delocalisation

# 1. Exogenous challenges (II)

This year's survey interviewed 119 senior power utility executives from 114 utility companies in 44 countries from 4 major regions.

## World results

Figure 4: In which areas of generation and supply do you expect technological developments to have the greatest impact over the next ten years?

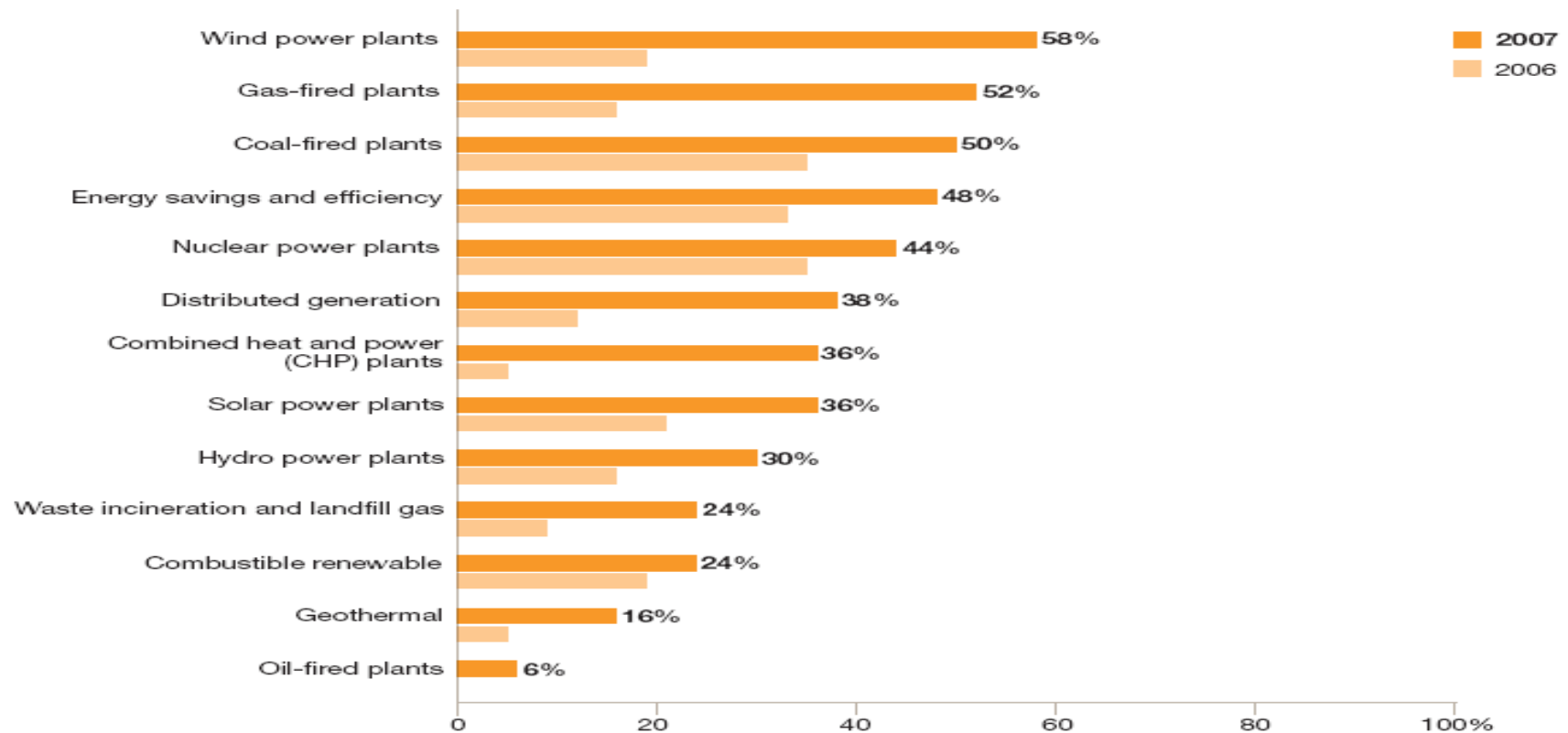


Note: Global responses only. % share of responses  
Source: PricewaterhouseCoopers, Utilities global survey 2007

# 1. Exogenous challenges (III)

## Europe results

Europe Figure 2: In which areas of generation and supply do you expect technological developments to have the greatest impact over the next ten years in your market?



**Note:** Europe responses only. % share of responses  
**Source:** PricewaterhouseCoopers, *Utilities global survey 2007*

## 2. Means

Propose the creation of an organisation:

- Independent
- privately owned and financed
- Professionally managed by private criteria,
- supervised by Administration(s)
- with leadership & major participation of stakeholders
- Not necessarily aiming at the JTI model, but compatible with public R&D funding "spirit".
- Based on European "Best practices": The Carbon Trust (<http://www.carbontrust.co.uk>)

**Technology Funding Initiative (TFI)**

## 3.1 Technology Funding Initiative (TFI) mission

To pursue Wind Energy European Technological leadership, as a consequence of maximizing R&D activity and productivity, by designing and deploying the most efficient R&D funding, managing and results commercialising instruments and practices.

## 3. 2 Technology Funding Initiative (TFI) benefits

### Seeking 'Win-Win'.....

#### For the sector:

- Mobilise, align & dinamize all R&D performing potentialities.
- Fix a "market failure", that hampers access to funding to "politically (sic) or financially unfit" R&D initiatives. Sealing the "R&D finance access gap".
- Maximise R&D efficiency and competitiveness.

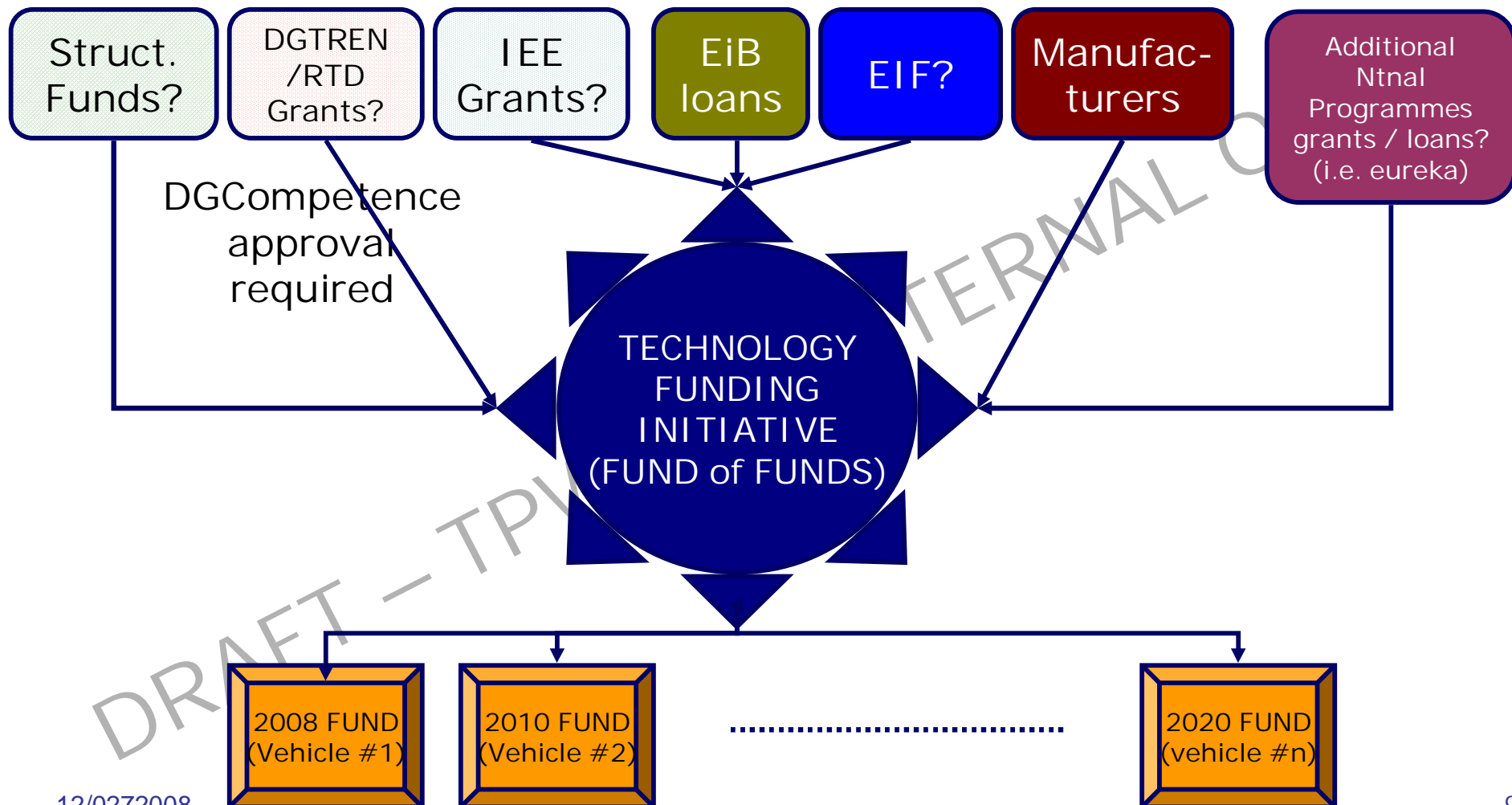
#### For the investors:

- Raise a new funding opportunity in the "clean tech" hot spot.
- Access professional, knowledgeable support.

#### For the public funding bodies (i.e. EC):

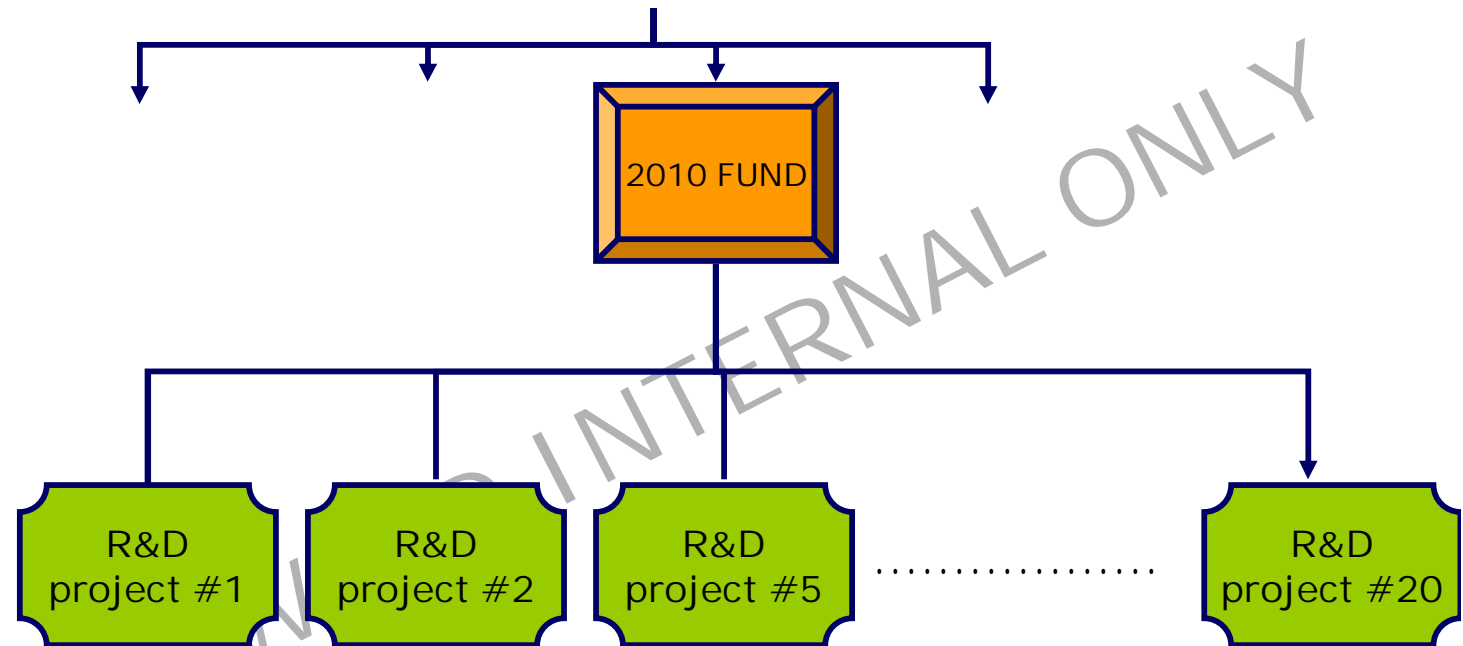
- Obtain leverage (multiplier effect) to current funds.
- Access management efficiency
- Foster SME participation

### 3.3 TFI working scheme (I)



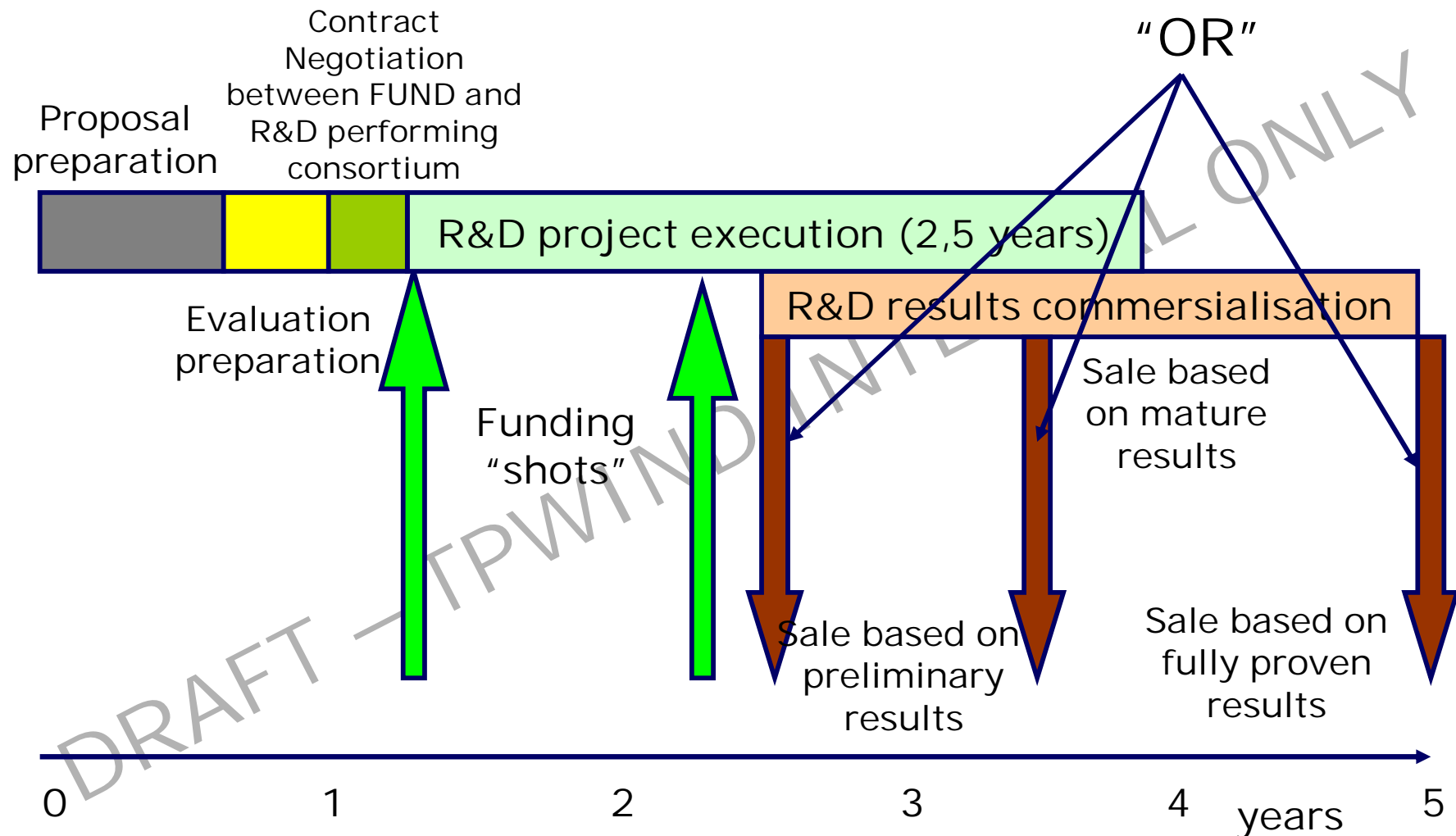
### 3. WEFO working scheme (II)

Each  
FUND(=funding  
vehicle)  
finances a call  
for  
R&D projects  
and can last  
10 ÷ 15 yrs



R&D Projects will be proposed by an ad-hoc consortium, not necessarily configuring a legal entity (same as European or Member States requirements)

## 4.0 The “complete” cycle of R&D projects (I)



## 4.0 The “complete” cycle of R&D projects (II)

- Innovation focused conceptual approach: Any R&D project should include the results commercialisation activity.
- However, R&D funding provision will not be binded to results commercialisation success, but to soundness and perceived value of R&D results.
- R&D activity is undertaken by R&D proposer.
- R&D results commercialisation activity is undertaken by TFI: Complementing R&D performers not willing or proficient to exploit generated R&D results (minimising “European Paradox”).

## 4.1 Calls for R&D proposals (I)

- Calls will be financed by a specific fund, the number of them and specific characteristics adjusted to needs.
- Call for R&D project proposals focused on SRA topics.
- Continuously open while calls last, with evaluations closing periods, at fixed times or depending on number of proposals.
- Main success criteria is: technical, financial and results exploitation soundness. Business Plan oriented: Potential economic benefits of R&D results exploitation (stating potential users, market price) vs. requested financing (minimum expected IRR).
- Clear specification of project deliverables (non necessarily patentable) and R&D results exploitation proposal (potential clients, users, etc.)
- No restrictions on minimum number of partners, its taxonomy, country of origin, budget size, budget structure, etc. in order to allow the most efficient consortium configurations. Open to any world organisation, except individuals.
- Published general conditions and evaluation criteria & on-line standardised submission formats

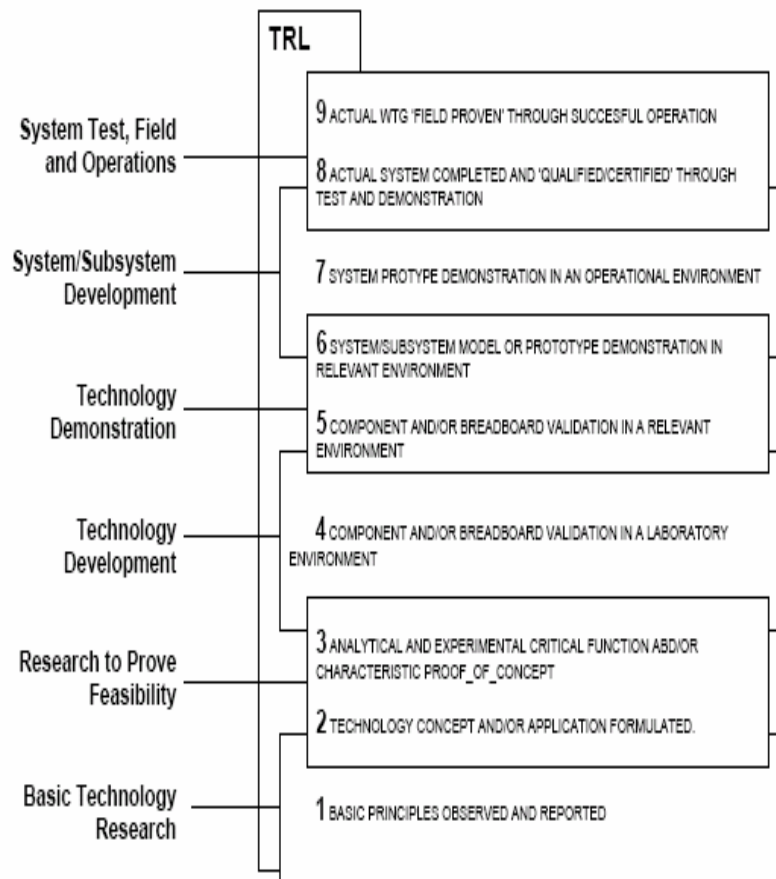
## 4.1 Calls for R&D proposals (II)

### On R&D potential proposers (& performers)

- Organisations or consortiums, freely arranged at their will.
- Scheme aimed at those with difficult / exhausted access to existing financing schemes or with an excess of ideas & proposals relative to accessible funding, such as:
  - § R&D intensive organisations: Universities & Public Research Bodies.
  - § Private Research & Technology Organisations (grouped under EARTO).
  - § Leading edge technology intensive SME's, spin-offs, start-ups, etc.
- Fostering hybrid consortiums, including "outsiders" from the Wind Sector, to pursue "cross innovation", normally rendering largest effectiveness.
- Initially, Manufacturers are not pursued performers. Their role should be more focused on call & proposal guidance and R&D results exploitation (see next slides).
- Typical project size: 0,75÷5 Meur.
- Default project finance is 100% (to avoid leaving out financially weak proposers).

## 4.1 Calls for R&D proposals (III)

### TECHNOLOGY READINESS LEVEL (TRL)



- Calls will be focused (although not exclusively) at Technology Development, following the "TRL ladder", adopted by NASA, DoD, etc.
- Only when technologies are mature, they can be equipped into existing or new products.
- This acquisition is part of Product Development, which should be undertaken by manufacturers, in projects that due to its closeness to market and its degree of confidentiality will normally not be brought to be funded by the TFI.

## 4.2 R&D proposal´s evaluation (Phase I)

- Proposal evaluation by independent experts, selected from pre-existing lists. Confidentiality agreement required.
- Evaluation performed on the following areas:
  - Scientific-technological (SRA and / or specific call issues).
  - Financial (Business Plan).
  - Risk assessment (due diligence).
  - “Not already invented” and “patent infringement free”, based on “state of the art reports” commissioned by TFI.
  - Project management soundness & resources.
- Masked proposals.

## 4.2 R&D proposal´s evaluation (Phase II)

- Proposal approved by *Fund Approval Committee*, composed by TFI staff, Financers´ representatives (including Administrations) and, if necessary, independent experts.
- Financers´ representatives are informed, but cannot take a position on candidates, for the sake of funding independence.
- Fulli identified proposals.

## 4.3 The Funding terms & contract

- TFI does not seek the return of provided financing, but sole ownership of R&D results, including deliverables (unless call option is executed).
- Sole ownership is key for efficient subsequent commercialisation.
- Project financing disbursements will be specified (amounts & timing), subjected to the hand-in of deliverables in due time and project supervision OK'ed.
- Cost justification might not be required. If necessary, global and at project completion (simplified bureaucracy).
- Call option: Possibility of proposers to buy back their project's R&D results at predefined price at project completion, but only for self exploitation purposes (i. e. manufacturing).

## 4.4 R&D project supervision

- R&D deliverables timely provided to TFI via web based tools (PDM-like).
- R&D results (deliverables) are valued by independent experts for risk and business soundness assurance.
- Typical project management ratios (Cpi, Spi) by a industry wide system (i.e. Primavera) web based.
- Standardised project supervision procedures by TFI staff: supervision meetings, etc.

## 4.5 R&D results exploitation (I)

- TFI provides periodical state of the art reports for re-inventing avoidance & patent infringement-free whilst R&D activity lasts.
- TPI decides the optimal IP protection roadmap.
- Normally (unless interest in call option by R&D performer), TFI specialised staff must contact potential exploitators, in order to reach agreements on property transfer either:
  - At an early project stage, based on preliminary results, at a lower cost (but higher than call option)
  - At a late project stage, based on mature results, at a higher cost.
  - At project end, based on certified results, at market price.
- Typical purchasers will be manufacturers.

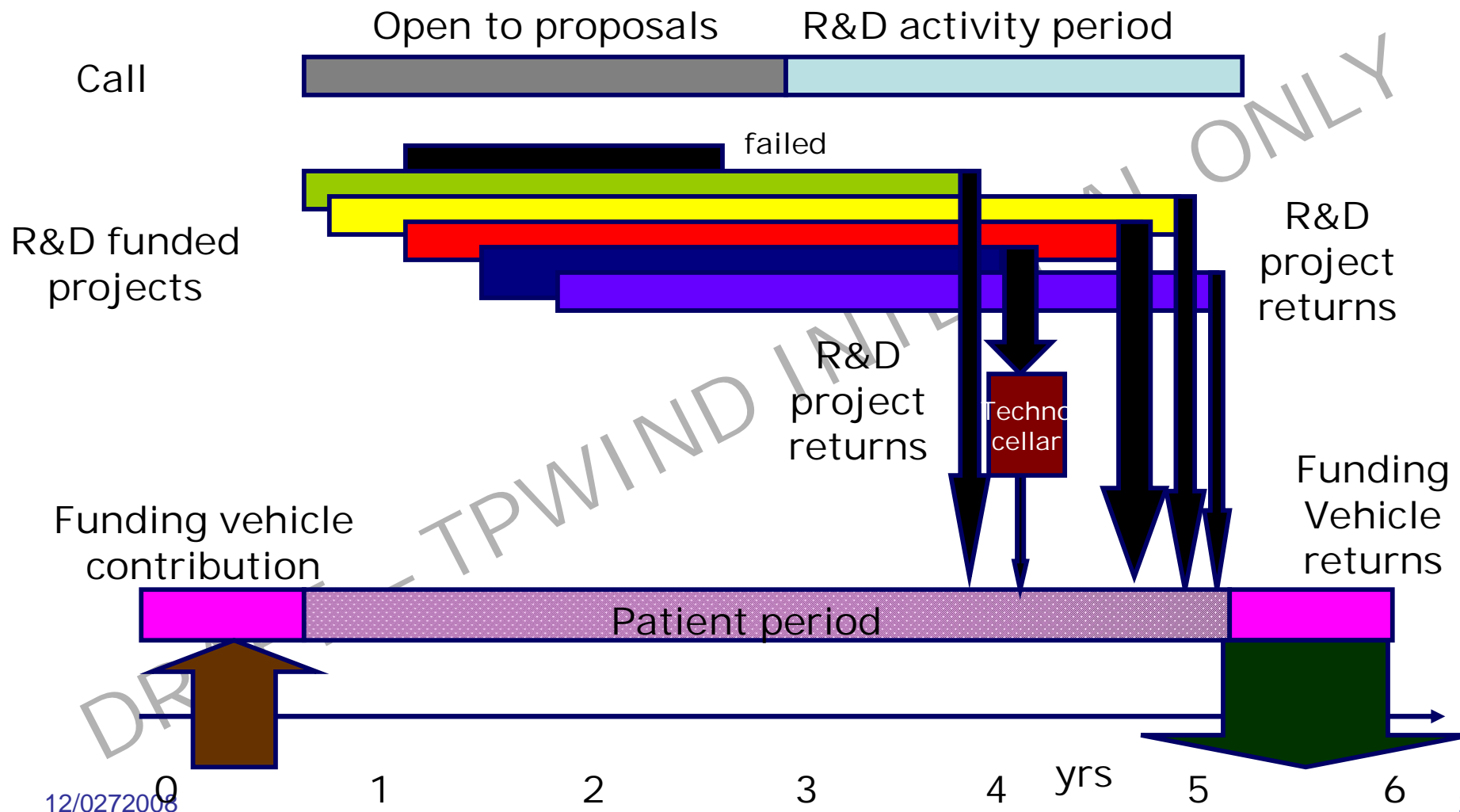
## 4.5 R&D results exploitation (II)

- TFI objective is not to be an IP holder, but to mobilise results into product development & manufacturing, even by sacrificing the maximisation of income.
- Therefore, a “holding time / achieved added value” indicator will be key for commercialisation management.
- TFI is the only R&D results commercialising or brokerage agent.
- An orthopaedic instrument might be required when R&D results are perceived as valuable, but not yet mature for manufacturers:
  - A TFI owned organisation, only for IP holding: “The Techno cellar”.
  - The cellar will pay the FUND a price for R&D results, based on its future potential value.
- Financers will be informed at the *Fund Commercialising Committee*, but cannot have a preferential access to R&D results, for TFI sound business and independence.

## 4.6 FUND operation (I)

- TFI staff ('General partner') will contact each FUND organisations potentially interested in financing, offering them the investing opportunity, stating target IRR –returns-, Corporate Social Responsibility benefits, etc.
- Agreements between each FUND and financiers will be reached.
- FUNDS can last 10 ÷ 15 yrs. A new FUND can be launched at any time, but typically every 4 ÷ 5 yrs. Each FUND size around 100 MEur.
- Typical EiB FUND contribution will be around 100 Meur, manufacturers around 1 Meur. EC to be explored.
- At FUND closing (after sale of results of the last funded project), capital gains will be returned to each financiers.
- Financers (i.e. the EC) may decide not to reimburse the augmented results, but to reinvest it in a subsequent FUND.

## 4.6 FUND operation (II)



## 4.6 TFI operation

- Yearly TFI operational business plan must be approved: Financial cashflow, operational expenses, IRR target (i.e. 10%), % of failed R&D, etc.
- TFI Income #1: TFI management fees will be a percentage on administrated funds (i.e. 1,5÷2,75%)
- TFI Income #2: An additional success fee (carried interest on excess IRR above target IRR) might be obtained from each FUND (i.e. 20% of marginal return above a IRR).
- TFI staff must be highly motivated by incentives schemes.

## 4.7 TFI legal structure

- Constituted as a private financing organisation, profit oriented, adopting the most adequate legal structure (in depth legal analysis to be undertaken).
- Equity financiers have a seat in TFI "Shareholders Board"

## 5. Next steps

- Preliminary conversations with European Investment Bank (EiB) and European Investment Fund (EiF) have been held with satisfactory results, for TFI sound design purposes.
- If TPWind stakeholders backs proposal, conversations should be held with top officials of the following:
  - DG Tren
  - DG Research
  - Intelligent Energy Europe
  - Other private R&D funding organisations
  - Manufacturers.
- If satisfactory, a TFI design study should be commissioned to a specialised consultant, possibly financed by a FP7 100% financed specific support action. Available by june 2008.
- TFI could be up & running in 2009, launched at the "European Energy Technology Summit".

## 6. Acknowledgments

- To all Finance Working Group members for their valuable contributions, tireless dedication and passion on the TFI idea.
- To many EiB / EiF officials for their interest and specialised comments.
- To TPWind members for their patience and openmindedness, allowing us to develop an absolutely innovative instruments to put us back where we never should leave: Leadership.