We published / told you:

**Mas²tering Vision**

*The creation of local communities of prosumers fully empowered to participate in the electricity market at the low voltage substation level of the smart grid.*
We positioned ourselves:
And also focused on a specific part (that less defined) of existing market frameworks
With respect to business models, we identified that the traditional “utility” business model was changing – that flows we’re becoming bi-directional between the actors, and that this represented a new type of business model – the multi-sided platform.
We defined the Local Flexibility Aggregator (LFA) business model opportunity as a MSP.
And looked at the flows between the actors

And “mini business models” in the larger business model opportunity

LFA – Prosumer
LFA – DSO
LFA – WMA
LFA – LFA
LFA – DSO
And looked at the flows between the actors
And in practical terms, the services / value propositions amongst the actors.
In discussing the LFA business model opportunity, it is important to consider who is assuming the role of the LFA and for what purpose.
To determine that, it is appropriate to consider an evolution of the flexibility market across time.
This led us to our project storyline, use-cases and associated business cases.

**Competitive Clusters**
Supplier assumes the LFA business model opportunity for in-home services & client retention

**Vertical Markets**
WMA assumes the LFA business model opportunity to broaden flexibility portfolio & reallocate small pockets of flexibility

**Functioning Market**
Suppliers & WMAs pair to assume LFA business model opportunity in the presence of a participating / proactive DSO
This led us to our three business cases.

**BC1:** Use of the LFA-MSP business model opportunity by a Supplier to increase competitiveness, expand its value-added services, retain or grow its client base and answer the call to empower consumers from either Prosumers themselves, regulation or market pressures.

**BC2:** Use of the LFA-MSP business model opportunity by an existing WMA to provide flexibility management services to Prosumers within a Local Energy Community to increase their flexibility portfolio and to facilitate the formation and goals of Local Energy Communities;

**BC3:** Partnering between a Supplier and WMA to exploit the LFA-MSP business model opportunity in a fully functioning flexibility marketplace where the DSO is a flexibility buyer.

Panel discussion question – Relevant business cases / view of the market space?
Survey Question

What likelihood (1 Low: 10 High) would you assign to the following actors being the first movers to assume the LFA role and make business with residential flexibility management?

- a. Suppliers (like ENGIE) ________________
- b. Existing aggregators (like KIWI) ________________
- c. Self-organized local energy communities ________________
- d. ESCO ________________
- e. Other __________________
Let’s assume a supplier assumes the LFA role? What rating (1 Low:10 High) would you assign to the following possible business motivations?

a. Revenue from flexibility trading
   _________

b. Entry into new and bundled services (energy management)
   _________

c. Client retention and/or preventing client loss
   _________

d. Image as a forward thinking market leader
   _________

e. Other ________________
Survey Question

Let’s assume an existing aggregator assumes the LFA role? What rating (1 Low:10 High) would you assign to the following possible business motivations?

a. Revenue from flexibility trading
b. Market positioning for future profitability
c. Ability to reallocate pockets of unused flexibility
d. Growth of user base

3. Other __________________

__________

__________

__________

__________
Exploitation business model coupled to the LFA business model

Panel discussion question – who will bear the technology costs / who will eat for free?
Mas2tering value chain

1st and 2nd step of optimization

Panel Question: Hypothesis correct – that not all flexibility services will be equal (“light vs. full”) (suppliers versus specialized firms)

Panel Question: Fees to prosumers. Flat? Variable? Flat + Variable?
Panel Question: We model the LFA passing through an WMA due to the small magnitudes of flexibility involved (e.g. no direct link between LFA-BRP). Good model?

Panel Question: What will be the primary use for local flexibility? 1: Local area optimization? 2: Aggregation for sale to the grid? (optimization approach match business?)
Pending Time Available

Approach to model and assess the business cases within a cost benefit analysis (CBA) and supported by our simulation and demonstration activities.
### Prosumer – LFA relationship

**Prosumer’s strategy**

<table>
<thead>
<tr>
<th>STRATEGY</th>
<th>CONDITIONS</th>
<th>CONSTRAINTS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ACTOR</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I am a prosumer</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>GOAL</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I want to reduce my energy costs</td>
<td>I do not want solutions that impact significantly on my comfort</td>
<td>I need to be active if I want to achieve my goal and maximise cost-reduction</td>
</tr>
<tr>
<td>I want to be greener</td>
<td></td>
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</tr>
<tr>
<td><strong>HOW TO ACHIEVE THE GOAL</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I buy the Mas2tering Energy Box and sign a contract for flexibility management services to maximise my cost-saving</td>
<td>I can invest my money for the energy box, but only with payback time lower than 3 years</td>
<td>I must respect contractual agreement with the LFA (service provider)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>I can pay a fee for the flexibility management services, but I expect to get a profitable service</td>
</tr>
</tbody>
</table>
Prosumer – LFA relationship

Drivers to assess prosumer’s profitability

Variables

- Number of LECs
- ToU tariffs
- Step of optimization
- PV&storage (Y/N)

Available flexibility

Scenario

Smart appliances penetration

Gross Cost-saving

Revenue

Net cost saving & Payback

Cost of the Mas2teting solution

Fee due to the LFA

Business parameters

Input data to simulations

Outcome of simulations
<table>
<thead>
<tr>
<th>ACTOR</th>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>I am a LFA</td>
<td>I am starting a new business</td>
<td>I must respect the rules of the free energy market</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>I want to run a profitable flexibility management business</td>
<td>Revenue must be higher than my OPEX</td>
<td>I must respect the rules of the free energy market</td>
</tr>
</tbody>
</table>

<table>
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<tr>
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<tbody>
<tr>
<td></td>
<td>I offer the Mas2tering solution and the associated services to prosumers</td>
<td>I overturn the CAPEX for the implementation of the Mas2tering solution on the prosumer</td>
<td>I need to ensure a profit also to my prosumer</td>
</tr>
<tr>
<td></td>
<td></td>
<td>I must ask a fee (either fixed or variable) to match and overcome my OPEX</td>
<td>I do not have to impact on its comfort conditions</td>
</tr>
</tbody>
</table>
Prosumer – LFA relationship

Drivers to assess LFA’s profitability

Variables

- Number of LECs
- ToU tariffs
- Step of optimization
- PV&storage (Y/N)

Distribution of Prosumers gross Cost-saving & revenue

LFA’s profit

Outcome of simulations

Input data to simulations

Available flexibility

Smart appliances penetration

Scenario

Business parameters

- CAPEX
- OPEX
- Fee/Revenue
- Prosumer’s payback time

Prosumer – LFA relationship
Net cost-saving achieved must ensure payback time lower than 3 years

Net cost-saving depends on gross cost-saving (function of flexibility) and the fee due to the LFA for flexibility mgmt. services

If net cost-saving is not enough the prosumer will not implement the Mas2tering solution

If the fee is too high the prosumer will not get a profit; if it is too low, the LFA will not get a positive margin

Also, it must ensure to the prosumer a cost-saving that makes its investment return within 3 years

To match OPEX and make a profit it needs to ask a fixed or variable fee to the prosumer

Prosumer – LFA relationship

Profitability chain
<table>
<thead>
<tr>
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<th>CONDITIONS</th>
<th>CONSTRAINTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>I am an Energy Supplier</td>
<td>I sell energy to domestic customers based on a contractual agreement</td>
<td>Retain clients is a priority</td>
<td>I must respect the rules of the free energy market</td>
</tr>
</tbody>
</table>

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</tr>
</thead>
<tbody>
<tr>
<td>I want to retain my clients and possibly increase my portfolio and revenue</td>
<td>Increase portfolio is an opportunity</td>
<td>I must maximise revenue but also reduce risks of losing clients</td>
<td>Prosumers must get a cost-saving from in-home flexibility services</td>
</tr>
</tbody>
</table>

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</tr>
</thead>
<tbody>
<tr>
<td>I offer MAS2TERING in-home optimization services to my customer portfolio and to customers that may want to change supplier</td>
<td>I can offer the solution and the services for free or overturn CAPEX to the prosumers/ask for a fee, but I must ensure global profit (between energy sale and flexibility services)</td>
<td>Payback time for the prosumer must be lower than 3 year</td>
<td>A minimum amount of flexibility is required</td>
</tr>
</tbody>
</table>
BC1: Supplier offering flexibility management for client retention

Drivers to assess Supplier’s profitability

Variables

- Number of LECs
- ToU tariffs
- Step of optimization
- PV&storage (Y/N)

Available flexibility

Scenario

Smart appliances penetration

Distribution of Prosumers gross Cost-saving & revenue

Supplier’s profit and benefits

Outcome of simulations

Energy sale business

Input data to simulations

Business parameters

- Client retention value
- CAPEX
- OPEX
- Fee/Revenue
- Prosumer’s payback time
I am a Wholesale market aggregator

I start a LFA business in a given area, inviting prosumers to be part of a Local Energy Community or implementing the Mas2tering solution in an existing LEC

I want to increase my flexibility portfolio and my revenue

My priority is to increase my flexibility portfolio in a sustainable way

I sell flexibility to energy stakeholders

A minimum amount of flexibility is required

I need to procure this flexibility from industrial and residential users

Once committed to provision of flexibility I must deliver it

My priority is to increase my flexibility portfolio in a sustainable way

Profit can come from flexibility management services and/or from flexibility sale to other grid stakeholders (BRP, TSO, etc.), but the LFA business in the LEC should be sustainable, i.e. must cover OPEX on its own.

Prosumers must get a cost-saving from flexibility services

Payback time for the prosumer must be lower than 3 year
BC2: WMA enabling flexibility management in a LEC

Drivers to assess WMA’s profitability

- Number of LECs
- ToU tariffs
- Step of optimization
- PV&storage (Y/N)

Variables

Available flexibility

Scenario

Smart appliances penetration

Distribution of Prosumers gross Cost-saving & revenue

Supplier’s profit and benefits

Outcome of simulations

Input data to simulations

Flexibility sale business

Business parameters

Revenue from flexibility sale
- CAPEX
- OPEX
- Fee/Revenue
- Prosumer’s payback time

Variable drivers for assessing WMA’s profitability

Step of optimization.

Variables:
- Number of LECs
- ToU tariffs
- PV&storage (Y/N)

Business parameters:
- Revenue from flexibility sale
  - CAPEX
  - OPEX
  - Fee/Revenue
  - Prosumer’s payback time

Outcome of simulations:
- Supplier’s profit and benefits

Input data to simulations:
- Available flexibility
- Scenario
- Smart appliances penetration
### BC3: WMA/Supplier partnership for full flexibility market

<table>
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<tr>
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<th>CONDITIONS</th>
<th>CONSTRAINTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>I am a WMA/Supplier partnership</td>
<td>I sell energy to domestic customers based on a contractual agreement</td>
<td>I need to procure flexibility</td>
<td></td>
</tr>
<tr>
<td>I want to combine energy sale and flexibility provision services to minimise risks and maximise profit</td>
<td>My priority is the maximization of profit through combination of services, client retention and portfolio increase</td>
<td>Once committed to provision of flexibility I must deliver it</td>
<td></td>
</tr>
<tr>
<td>I use Mas2tering to offer flexibility management services coupled with energy provision to maximise value for individual prosumers, LEC and DSO at local level</td>
<td>My OPEX must be lower than margin from all combined sources of revenue</td>
<td>I must respect the rules of the free energy market</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Prosumers must get a cost-saving from flexibility services</td>
<td>Payback time for the prosumer must be lower than 3 year</td>
<td></td>
</tr>
</tbody>
</table>

### HOW TO ACHIEVE THE GOAL

- My priority is the maximization of profit through combination of services, client retention and portfolio increase
- My OPEX must be lower than margin from all combined sources of revenue
- Prosumers must get a cost-saving from flexibility services
- Payback time for the prosumer must be lower than 3 year
BC3: WMA/Supplier partnership for full flexibility market

Drivers to assess WMA’s profitability

Variables

- Number of LECs
- ToU tariffs
- Step of optimization
- PV&storage (Y/N)

Available flexibility
- Scenario
- Smart appliances penetration

Distribution of Prosumers gross cost-saving & revenue

Supplier & WMA’s partnership profit and benefits

Outcome of simulations

Combined businesses

Input data to simulations

Outcome of simulations

Business parameters

- Revenue from combined services
  - CAPEX
  - OPEX
  - Fee/Revenue
  - Prosumer’s payback time

Scenario

Smart appliances penetration

Drivers to assess WMA’s profitability

Available flexibility
- Scenario
- Smart appliances penetration

Distribution of Prosumers gross cost-saving & revenue

Supplier & WMA’s partnership profit and benefits

Outcome of simulations

Combined businesses

Input data to simulations

Outcome of simulations

Business parameters

- Revenue from combined services
  - CAPEX
  - OPEX
  - Fee/Revenue
  - Prosumer’s payback time
<table>
<thead>
<tr>
<th>BC3_sub: DSO supporting flexibility management and buying flexibility from local market to deal with local issues</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>STRATEGY</strong></td>
</tr>
<tr>
<td>I am a DSO</td>
</tr>
<tr>
<td>I want to manage the distribution grid in the most cost-effective way</td>
</tr>
<tr>
<td>I want to reduce OPEX and defer investment for grid reinforcement</td>
</tr>
<tr>
<td>I support local flexibility management because it indirectly reduces my OPEX</td>
</tr>
<tr>
<td>I buy flexibility from the Local Market to deal with local issue rather than reinforcing grid, curtailing RES generation and in general minimise OPEX</td>
</tr>
</tbody>
</table>
Panel Discussion Point: We argue the drivers of client retention / client acquisition and brand/image (competitiveness) are important but find them difficult to model / make concrete. Comments? (important part of the argument or too subtle) (nice ways to make concrete?)

Panel Discussion Point: We find the DSO difficult to model. The deferral of grid reinforcement / reduction in OPEX. Any pointers for that / are DSOs a relevant part of the discussion in the near / medium term?
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Thank You!

Mas²tering