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BCG

endesa

The French power retail market

Second Steering Committee

June 21st, 2007

THE BOSTON CONSULTING GROUP

This volume contains copies of slides presented by members of The Boston Consulting Group to Endesa managers.

During the presentation, the slides served as the focus for discussion; they are incomplete without the accompanying oral commentary

This document will be most meaningful, therefore, to those who attended the meeting

Agenda

French power retail market

Endesa France commercial strategy

- Poweo "business case"
- Analysis

Synthesis

French power market – Summary from the previous meeting

1 **The French market is big and liberalizing…**

- Consumption reached ~450TWh in 2005, ~300TWh of which non-residential
- Non-residential segments are fully open to competition since 2004, residential on July 1st

2 **… but the free market is still limited with very differentiated segment profitability**

- Only 16% sites have a market contract so far, 66% of which with the incumbent (EdF)
- Low regulated prices have stayed below wholesale power prices since 2004, making medium-sized, small & professional segments unprofitable
- Only large clients look profitable
  - Endesa France mainly playing in that segment reached a net profit of 1.85 Mio €

3 **Little evolution is expected in the non-residential market for the next 2 years**

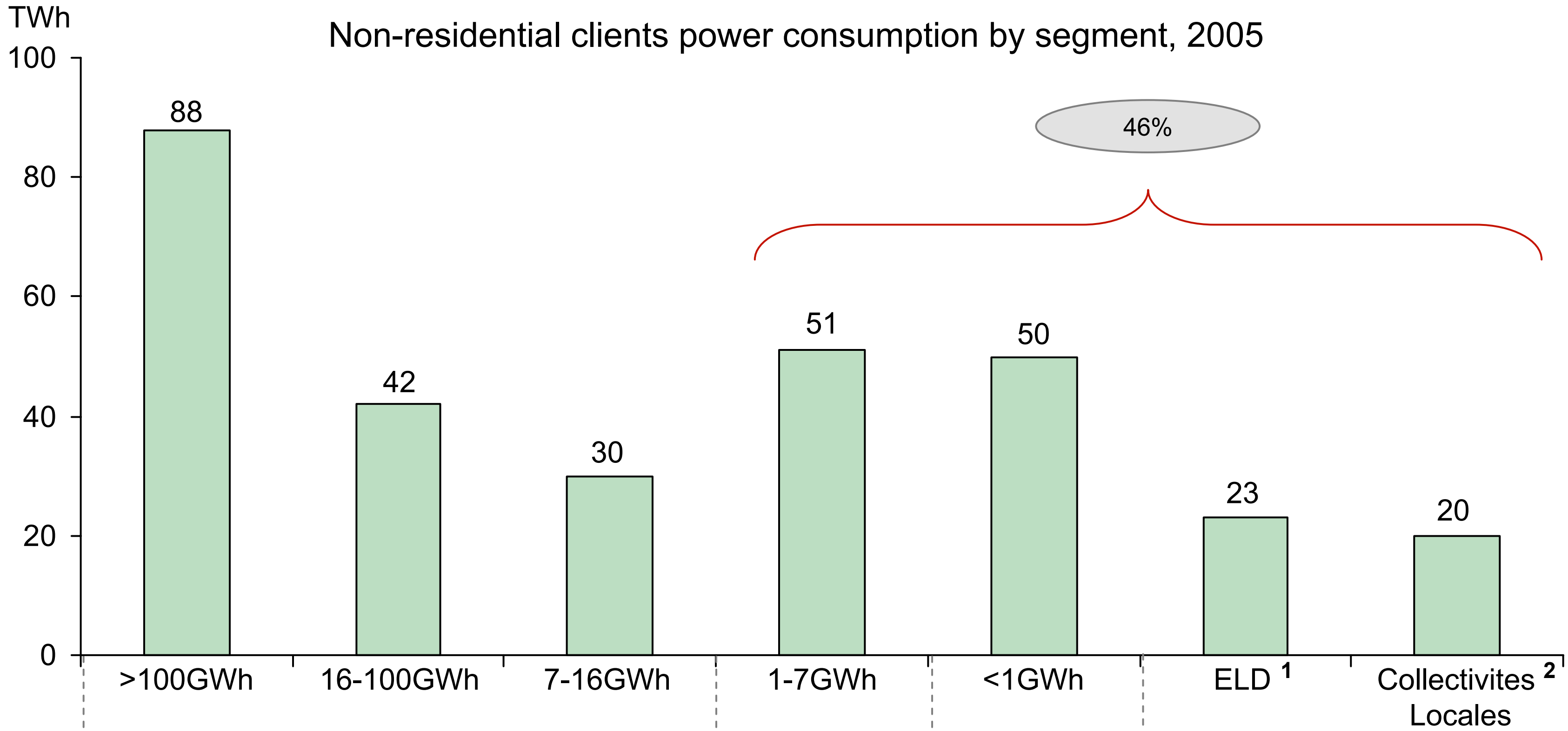
- A transitory regulated tariff (TaRTAM) must be applied to "market" contracts
- Some phasing out of the regulated tariffs is expected afterward, the process still unclear

4 **Main competitors in mass market power retail (other than EdF) are Poweo and GdF**

- GdF enters power retail to defend core gas supply clients from (EdF) dual fuel offers
- Poweo currently loses ~14€/MWh in retail but bets on the residential market opening

Clients below 7 GWh annual consumption represent over 45% of the accessible non-residential market

Non-residential clients power consumption by segment, 2005



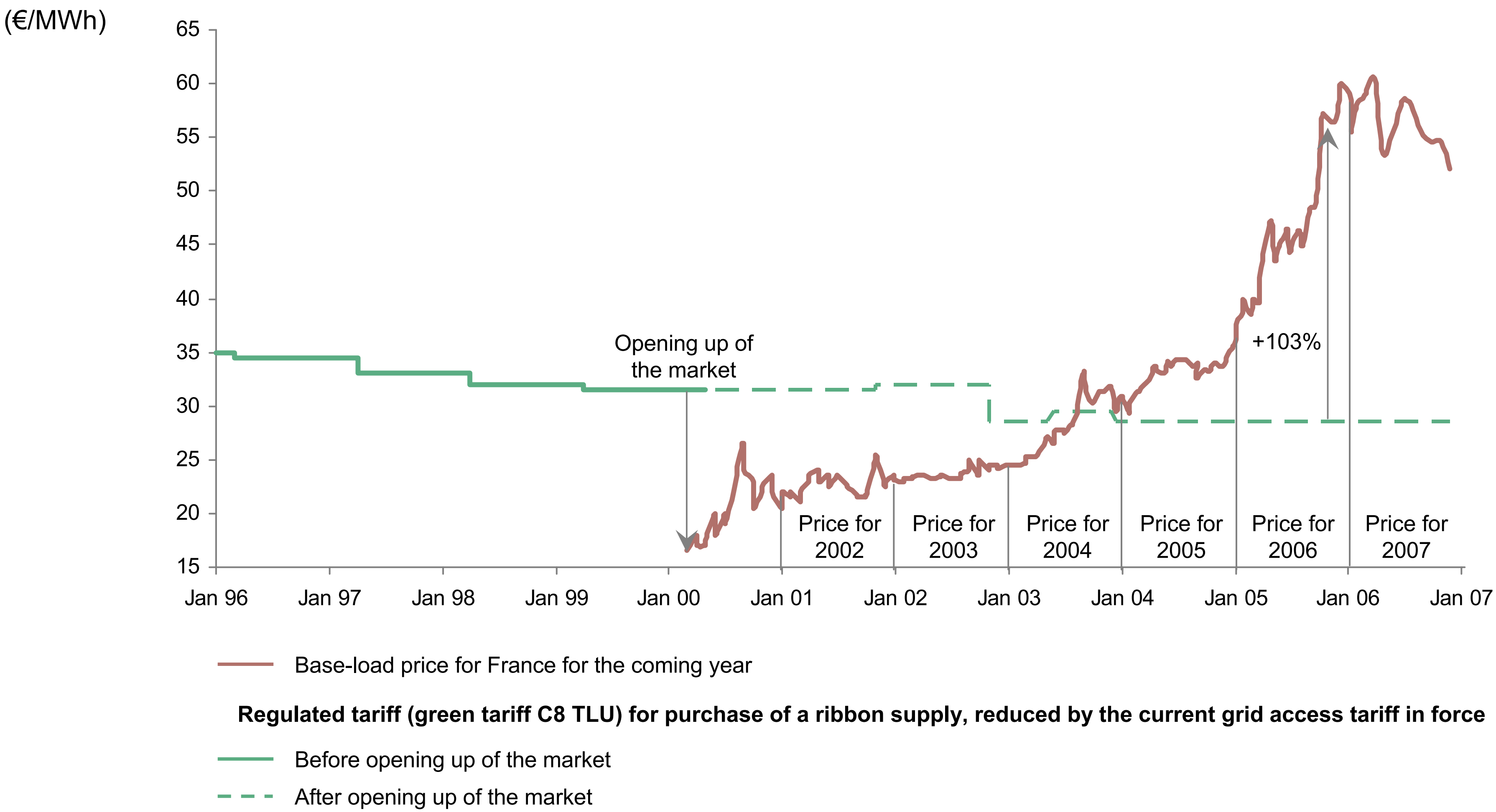
	>100GWh	16-100GWh	7-16GWh	1-7GWh	<1GWh	ELD[1]	Collectivites Locales[2]
Avg. consumption (GWh)	440	30	17	2	0,02	144	0,51
# clients (K)	0,2	1,4	1,8	25	2 150	0,16	39
	Large			Medium	Professional		

1. Local distribution enterprises 2. Local public entities

Source: BCG analysis, based on 2003 consumption split

After 2004 the free-market prices higher than the regulated tariff

'Green tariff' for large-scale industrial sites excluding taxes, transmission and CSPE
(€, constant at January 1st, 2005)



Source: CRE 2006, Powernext; BCG analysis

TaRTAM provides a partial reversal of deregulation…

Basic facts of the transitory regulated market adjustment tariff (TaRTAM)

- Max value of 123% of the regulated green tariff, 120% yellow, 110% blue [1]
- Applies to **all** market contracts for 2 years from the client application date (before July '07)
- Must be applied by all suppliers upon request from their customers
  - only for the remaining duration of the contract (suppliers may refuse to renew it)
- Losses will be compensated a posteriori by the French government
  - extra-cost paid by producers with nuclear and hydro production[2]

Expected consequences of the TaRTAM

- Suppliers can only expect to recover costs, thus no cash flow for investments for 2y – plus high uncertainty surrounds the process and actual timeline of compensations
  - Powernext prices used to assess sourcing costs of suppliers
- Investments likely to be further postponed / reduced due to uncertainty regarding future extensions or replications of the TaRTAM
- Overall, a slow down of the actual liberalization of the market is expected

Customers in the regulated market are still unlikely to exercise their eligibility due to the uncertainty regarding the potential safeguards in place if wholesale prices rise excessive

1. Blue tariffs : Power subscription < 36 kVA ; Yellow tariffs :36 kVA ≤ Power subscription ≤ 250 kVA ; Green tariffs : Power subscription > 250 kVA
2. Mainly EDF with minor contribution of Suez

Source: CRE, industry experts, BCG analysis, Endesa France-BCG team

… but it seems the beginning of the end to regulated prices…

EU competition authorities are launching an enquiry into regulated tariffs, claiming that:

- Subsidized tariffs may be providing unfair advantages to medium- & large-sized businesses
- The tariffs have prevented a successful opening of energy markets to businesses, with some 19 alternative power suppliers stepping in since 2004 gathering only six percent of consumers.

French power market under pressure from EU Energy authorities (April and December 2006)

- Due to the barrier to entry tariffs represent, preventing true freedom of choice among suppliers
- Stressing the need for ownership unbundling, separating networks mgmt from distribution

Some phasing out of the regulated prices is foreseen at the end of the TaRTAM period

- Return to regulated market does not seems politically feasible…
- …which also makes unlikely an extension of the TaRTAM beyond its initial 2-year period

In the meantime, low supplier switching is expected

- No reason since prices are capped at the same level for all suppliers
- Unless the decision relates to the conditions offered for the period after the TaRTAM

Source: Customer interviews, Factiva news (Reuters, Le Figaro)

…with large customers reluctant to pay Powernext prices

Insights from interviews to large clients

"Fair" pricing would need to be cost-based –with some reference to Powenext

- To better reflect average cost of electricity in France, which is lower
- Leading to a partnership approach in which clients would share the supplier's industrial/investment risks, e.g. related to power generation

Pure "mark-to-market" pricing discourages customer loyalty

- As a result ~95% of the price is predetermined and equal for any supplier
- Only the ~5% of the price related to cost to serve and margin, is negotiable
- Power becomes a commodity, with purchasing process similar to oil

Reference price for large clients is marginal cost of nuclear or coal plants (€30-35€/MWh vs. 50€ on Powernext)

Source: Customer interviews

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Poweo loses 14 €/MWh on power retail, partially compensated with trading margins

Poweo financials (€M)	2005	2006
(+) Power retail sales [1]	**68,14**	**148,21**
(-) Energy cost	**75,59**	**168,39**
(=) Gross margin	**-7,46**	**-20,18**
• As a % of sales	-11%	-14%
• €/MWh [2]	-5,11	-6,61
(-) Operational costs [3]	**13,66**	**22,97**
• €/MWh [2]	9,36	7,53
(=) EBITDA	**-21,12**	**-43,15**
• As a % of sales	-31%	-29%
• €/MWh [2]	-14,46	-14,14
(+) Net margin on energy management	**16,50**	**50,20**
(=) Reported operational P&L	**-4,62**	**7,05**

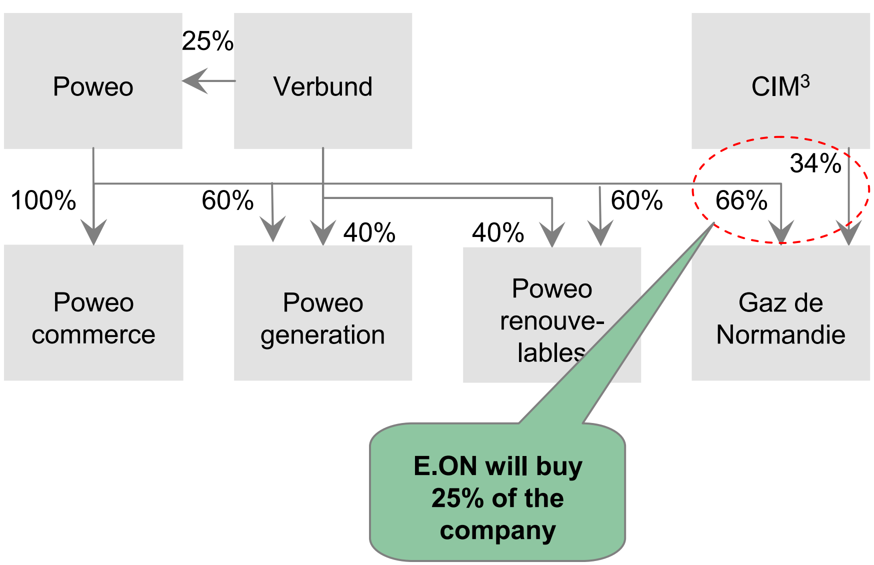
1. Net of grid charges 2. Sales volume estimate = Energy costs / average annual Powernext price 3. Allocated 90% to power supply vs. gas and trading

Source: Poweo financial accounts and management reports; BCG analysis and estimates

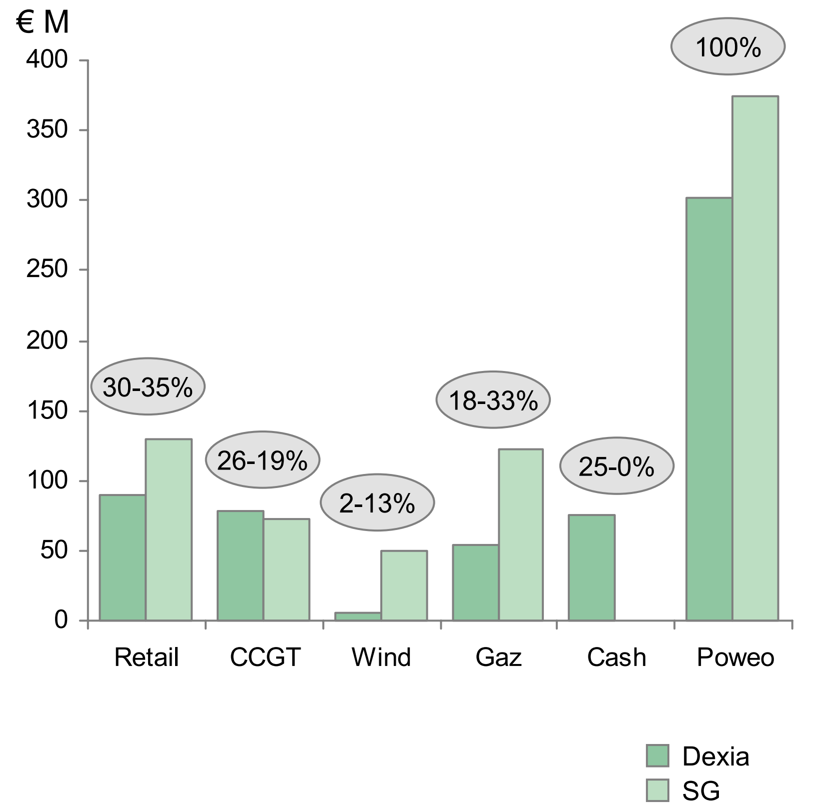
The valuation of Poweo is the sum of four businesses

Sum of the parts valuation of Poweo

Poweo — Group organization [1]



Sum of the parts valuation[2] by Dexia and SG



1. Société Générale Equity Research 2. Equity Value 3 Compagnie Industrielle Maritime

Source: Société Génerale broker report May 2007; Dexia broker reports September, October, and December 2006; BCG analysis

High valuation of Poweo's retail assumes low cost sourcing from EdF swap and strong growth within residential segment

Key assumptions underlying valuation by SG [1]

EdF power cost estimated at ~30€/MWh

- 160 MW swap to cover 120,000 SMEs or 250,000 residential clients, for 15 years
- Retail gross margins of up to 40% according to report
- Profitable balancing sales to RTE

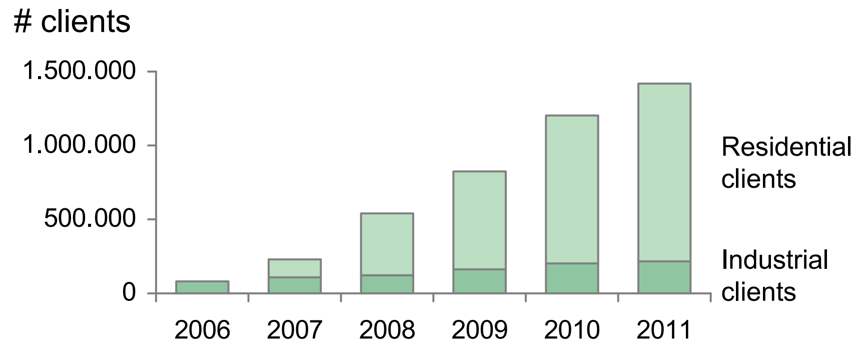
200K SMEs and 1M residentials forecasted by 2010

- Building on a strong brand (third best-known supplier)
- Supported by big marketing spend (~€10–12M, e.g. TV campaign on TF1 during April–May 2007)
- Offering ~3–5% discount on regulated tariffs

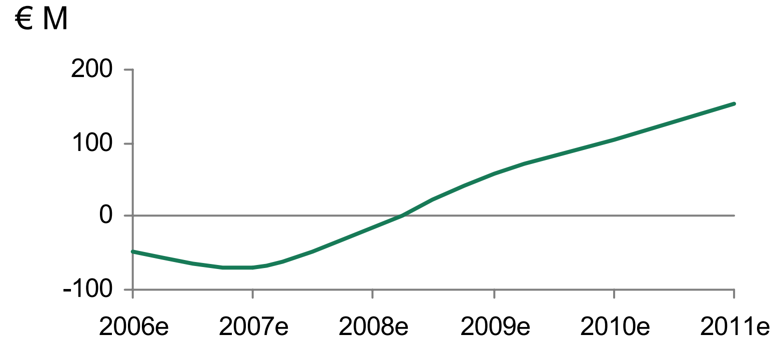
Other positive factors boosting the valuation

- Potential for net profits on energy management
- Potential increase of regulated tariffs after 2009
- Possibility of additional agreements similar to EdF

Projected growth in client base [2]



Contribution from energy sales 2006–11 [1]



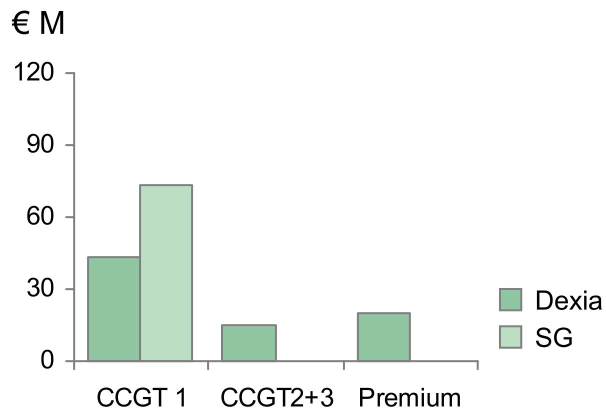
1. The slide refers to SG because the valuation from Dexia was outdated, prior to the EdF swap and the announcement of Poweo's goals regarding the residential segment
2. Société Générale Equity Research

Source: Société Génerale broker report May 2007; Dexia broker reports September, October, and December 2006; BCG analysis

High expectations underlie the valuation of upstream projects

Main assumptions behind analysts' valuations

Power generation



60% CCGT 1 (412 MW): €43–73M [1]

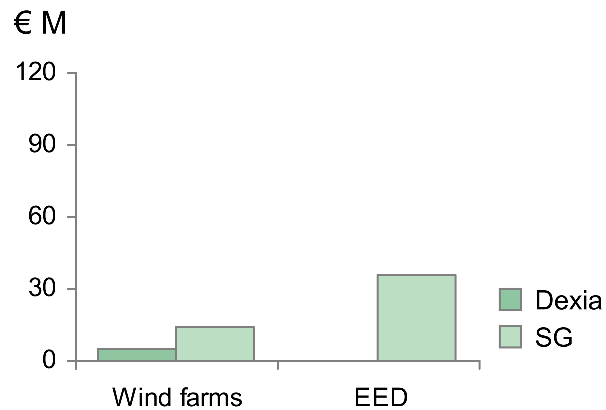
- Investment €233M
  - Dexia:
    - 6.250 operating hrs/y
    - Spark spread ~17 €/MWh
    - WACC 6,1%
  - SG:
    - €145–148M sales/y
    - €13–18M EBIT/year
    - WACC 5,98%

CCGT 2 + 3 (1,200 MW): €15M

- Sites secured, valued at 2,5% capex

Premium paid by verbund: €20M

Renewable power



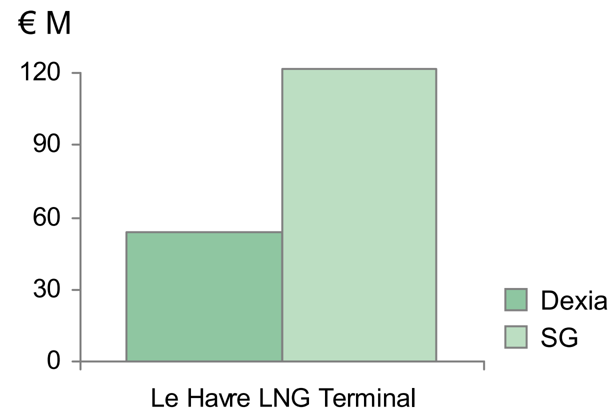
Wind farms 10 + 3 MW: €5–14M [1]

- Investment €14M
  - Dexia:
    - 2.300 operating hrs/y
    - Wholesale price ~ 60 €/MWh
    - WACC 6,5%
  - SG:
    - 2.400 operating hrs/y
    - €2M sales Y1, 2% growth/y
    - EBIT margin 18%
    - WACC 5,64%

Acquisition of EED [2]

- Price paid ~€12M
- Own developments up to 254 MW
  - Up to 450MW for third parties

Gaz de Normandie



66% stake, active in 2011: €54–122M [1]

- Investment: 50 €M/bcm, 8–10 bcm
  - Dexia:
    - Based on revenue potential
    - 75 tankers deliver 61 TWh/y
    - Terminal fees at 1,04 €/MWh
    - WACC 6,3% - 8 bcm
  - SG:
    - Based on discounted capex
    - 9 bcm (€450M capex)
    - Discount rate: 8,5%

Secures gas supplies for CCGTs
Provides entry in a growth market

E.ON has just bought 24.5 % stake in the company and 3 Bcm of capacity

1. Net of debt 2. Valuation of the acquisition of Espace Eolien Developpement only available from SG

Source: Société Génerale broker report May 2007; Dexia broker reports September, October, and December 2006; BCG analysis

Poweo has launched rights issue for 150 Mio € to fund its plans

Main shareholders will subscribe the issue in proportion to their shareholdings

- Austrian electricity group Verbund (25,8 %) and holding company Gravitation (9,9%)…
- … with the balance to be subscribed by a banking syndicate
- Under the terms of the issue, which will take place between June 13 and June 25, six new shares will be issued for every seven existing shares at a price of 29 euros each.

Proceeds from the operation will be used to finance investments for 2bn euros to 2012

- To increase its installed capacity to 3 400MW
- To reach 100 000 private customers by the end of this year, and 1 Mio in 2010

Debt gearing would explode without the capital increase[1]

- Planned investment to require up to 1,6 Bln € in debt (~2 200% vs. capital by 2011)
- A further €50M capital increase would keep gearing at ~150%, considered reasonable for a growing company

1. Société Générale brokecr report May 2007
Source: Société Générale; Factiva news(Les Echos)

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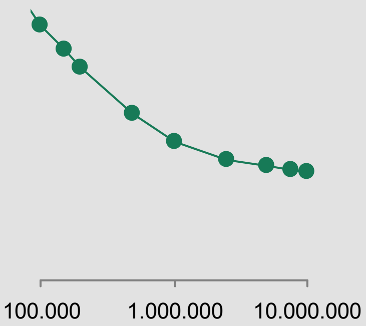
Synthesis and next steps

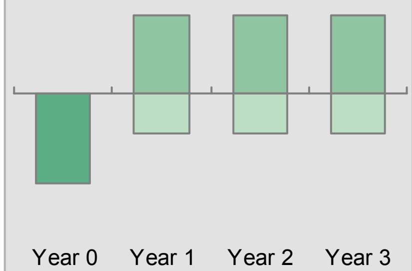
We built a model that estimates power retail profitability and Endesa cash flow in three steps

1 **Cost to serve per client type model**



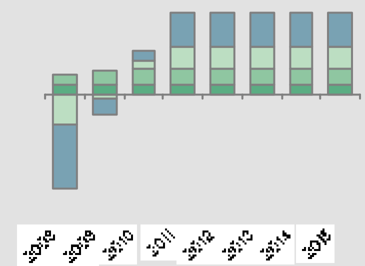
Required inputs
- Number of clients
- Call centre costs
- Marketing costs
- CRM investment
- Sales department
- Overhead
- Imbalance costs
- Agent fee
  - fixed (e.g. token)
  - var. (fee per MWh)

2 **Client / segment profitability model**



Required inputs
- Cost to serve per client type per size
- Number of client per type
- Margin per MWh
- Acquisition cost
- Average lifetime
- Average annual consumption

3 **Endesa P&L model**

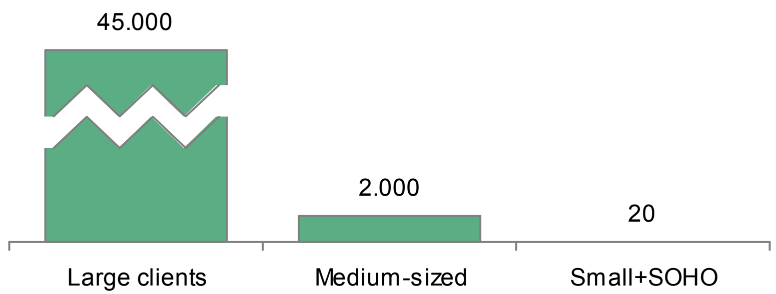


Required inputs
- Margin per MWh
- Number of client per type per year
- Average lifetime
- Average annual consumption

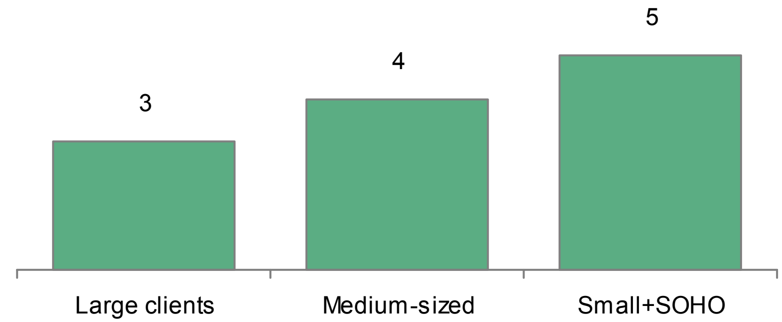
The three target segments largely differ from one another

Key parameters for each market segment (France)

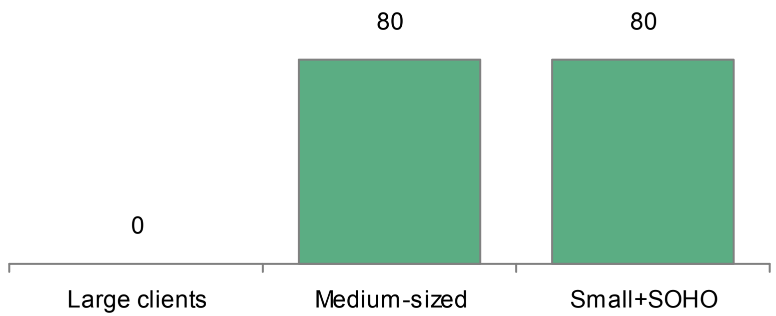
Avg. annual consumption (MWh / year)



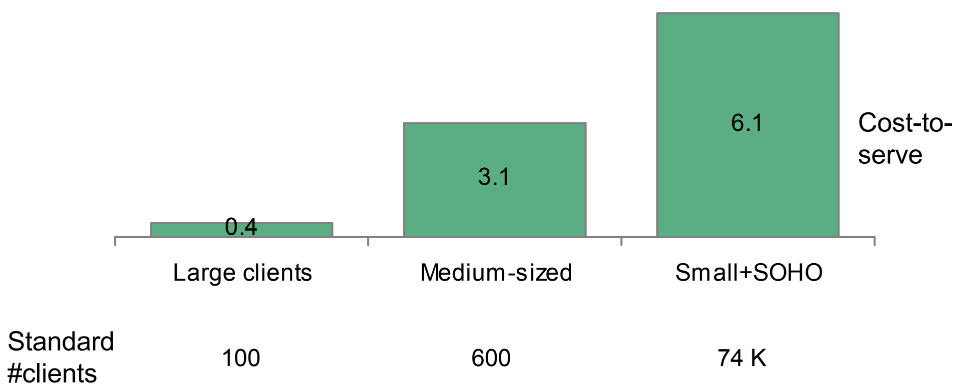
Avg. lifetime (# years)



Acquisition cost (€ / client)



Standard cost-to-serve[1] (€ / MWh)



1. Including variable agents' fee for both medium-sized and small+SOHO clients

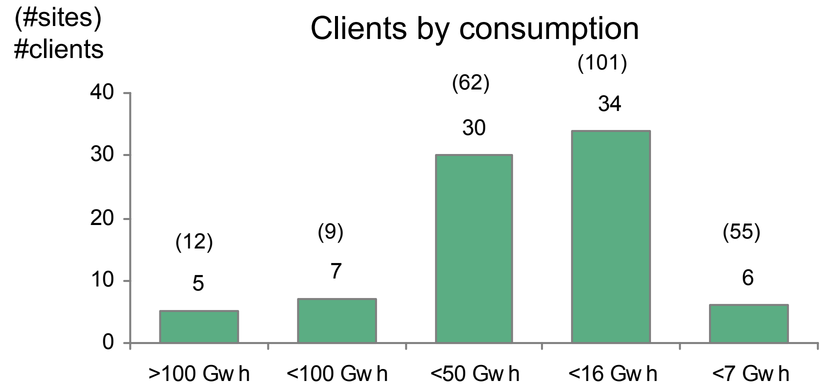
Note: Segments defined in terms of annual consumption: Large clients, over 7 Gwh; medium-sized clients, between 1 and 7 GWh; Small + SOHO, under 1 GWh

Source: BCG model, BCG analysis, BCG estimate

Endesa France 2006: 1,85 Mio € net profit on 4,5 TWh sold to ~160 large industrial clients

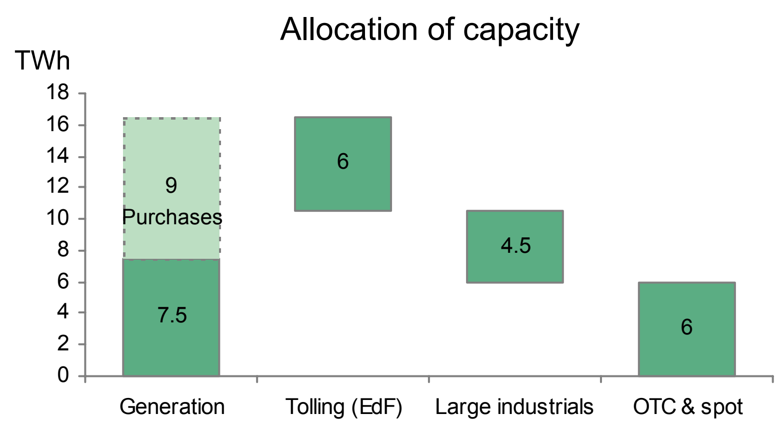
Key figures '06 – sales to large industrials

- Sales volume ~ 4,5 TWh
- Number of clients/sites ~ 160/350
- Sales turnover ~ 240 Mio €
- Gross profit ~ 4,4 Mio €
- Net profit ~ 1,85 Mio €



Current generation capacity / sourcing

- Generation capacity ~ 7,5 TWh
- Purchases ~ 9,0 TWh



Organization of commercial BU

- 18 FTEs (6 account managers)
- 4 offices

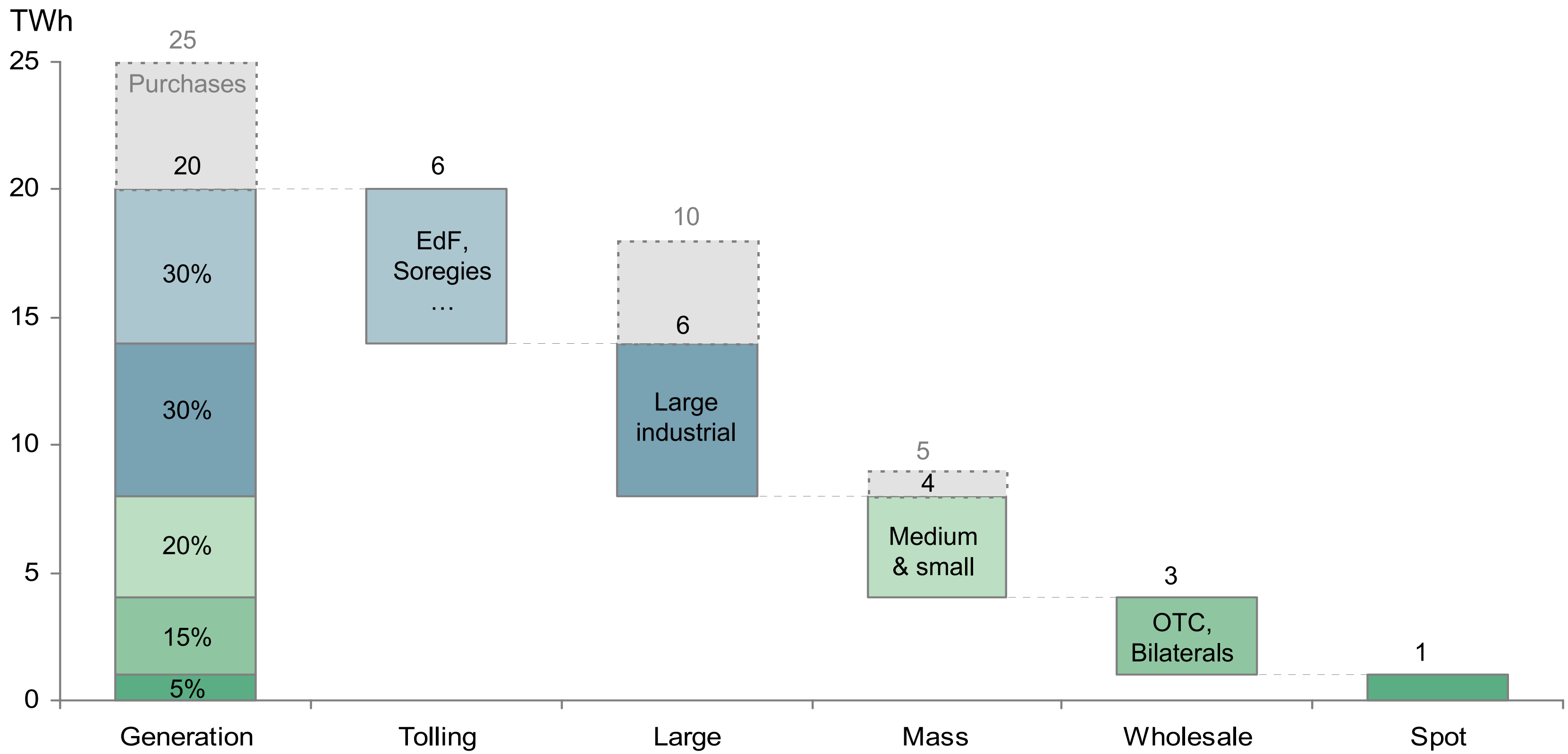
The retail activities seem an energy management tool (portfolio optimization)

Source: Company data, BCG analysis

Endesa France 2012 targets: sales of ~15TWh to end users

Including 5TWh of purchased base-load

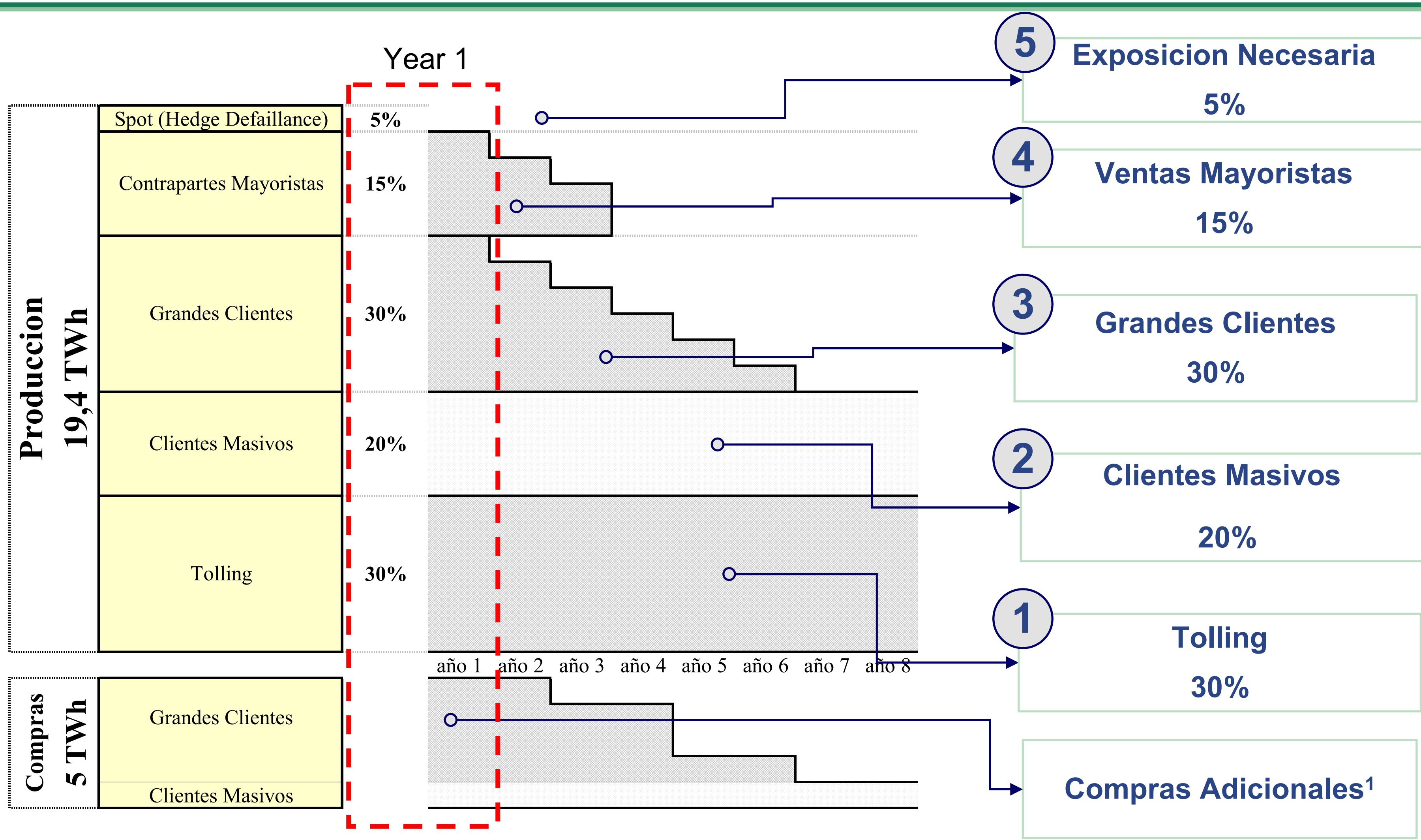
Planned allocation of capacity



Purchases are required in order to fill customer profile with energy lacking in Endesa France production (e.g. off-peak)

Source: Company presentation

Sales portfolio plan for Endesa France in the following years



1. The equipment of production of Endesa Francia are in the Mid Merit, while the clients (massive or Great) require the coverage of off-peaks; so it is required to purchase 4 TWh / year of base-load purchases in order to cover it

Source: Endesa France

Three different scenarios to evaluate the possible economical results of the retail strategy

1 Base case	**Entering in the three segments with standard supply (production + pool price)** • Segments entry: Large, Medium-size & Small + SOHO clients • Energy price: Powernext price
2 "Cheap sourcing" thanks a swap with the incumbent	**Entering in the three segments & signing an energy supply contract with EdF** • Segments entry: Large, Medium-size & Small + SOHO clients • Energy price ~ 30 € / MWh – price reported in broker report
3 "Cheap sourcing" & selecting segments	**Entering in the three segments & signing an energy supply contract with EdF** • Segments entry: Large, Small + SOHO clients – no entry in the medium-sized segment • Energy price ~ 30 € / MWh

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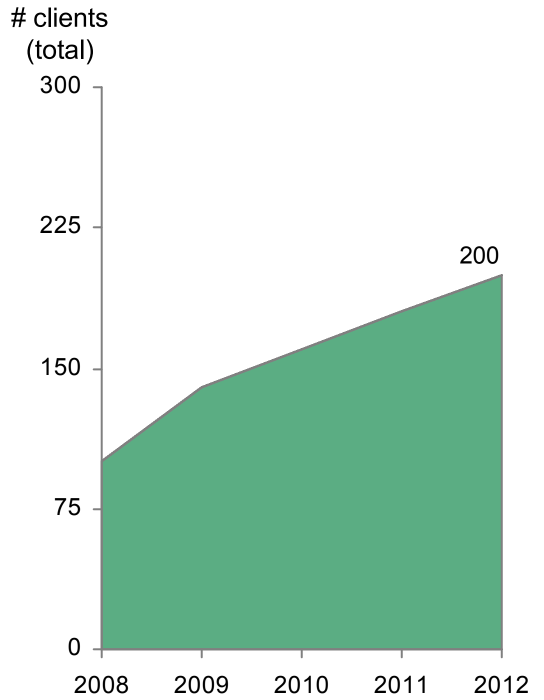
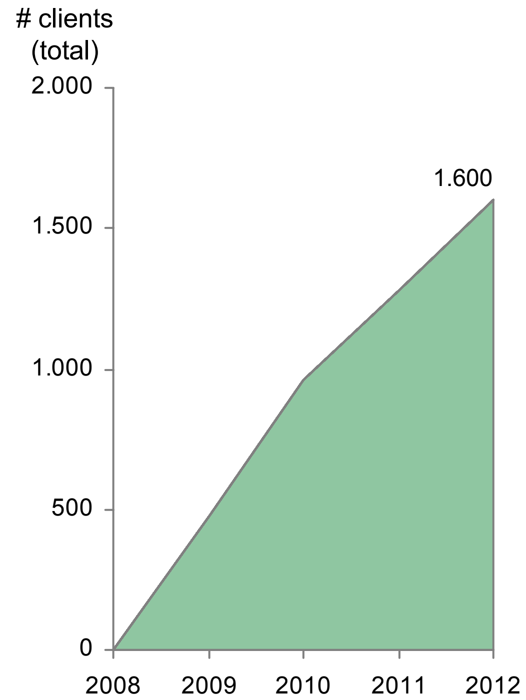
Strong growth is required to meet 2012 sales targets (I) …

Possible client base growth 2008-2012

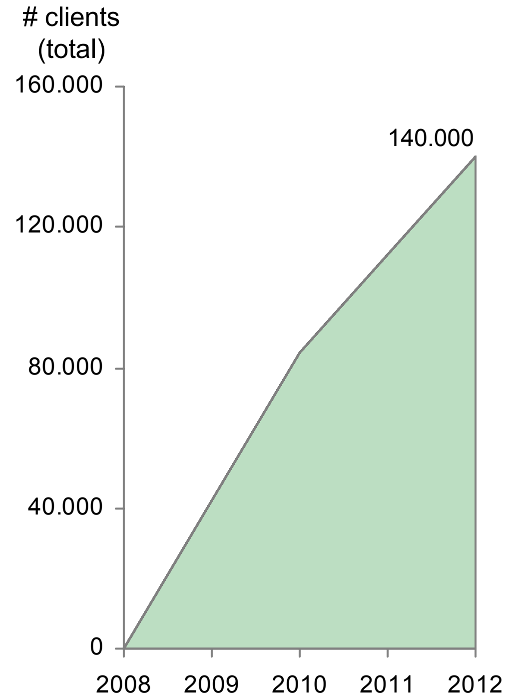
Large clients



Medium-sized clients



Small + SOHO clients



Market share (clients)	Large clients	Medium-sized clients	Small + SOHO clients
	~6%	6.4%	5.6%

Note 1 : Number of "Large clients" is estimated dividing increasing volumes by flat average consumption; an alternative could be to have flatter number of clients, considering an increasing average consumption during the years
Note 2 : Small changes in the number of customers vs. the previous meeting
Source: BCG model, BCG analysis, BCG estimate

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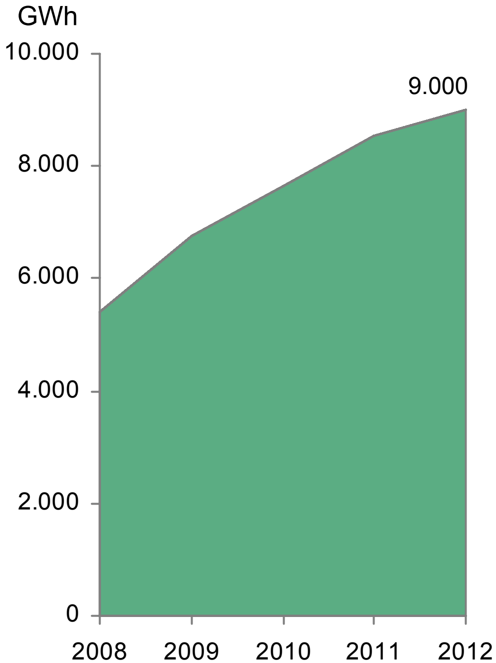
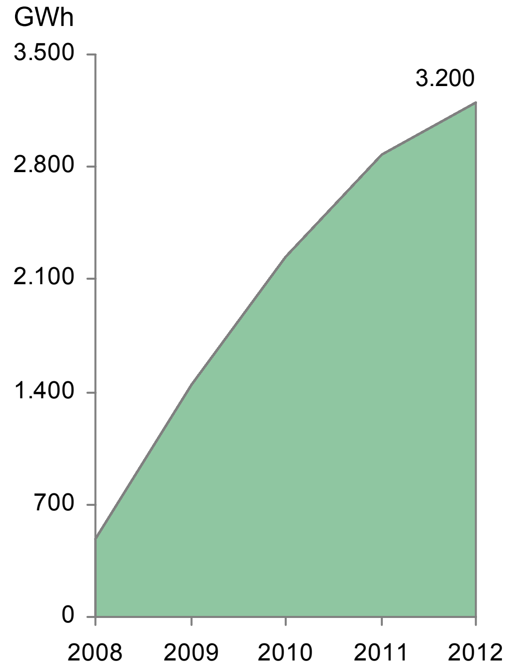
Strong growth is required to meet 2012 sales targets (II) …

Possible volume growth 2008-2012

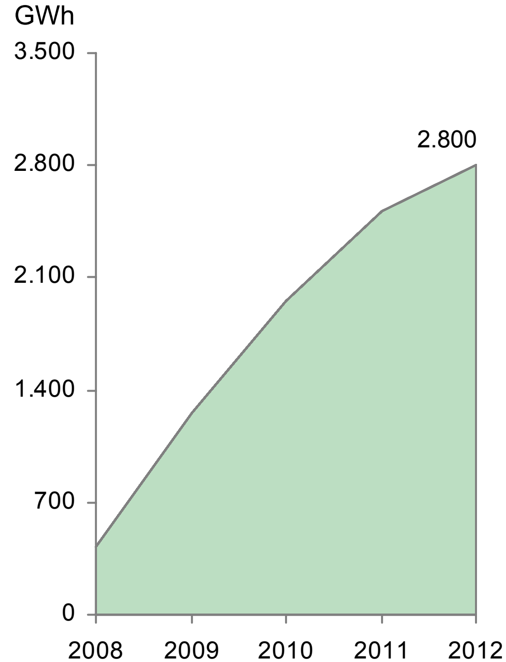
Large clients



Medium-sized clients



Small + SOHO clients



Note: Average consumption of large client ~45GWh; medium-sized ~2 GWh; small ~20 MWh
Source: BCG model, BCG analysis, BCG estimate

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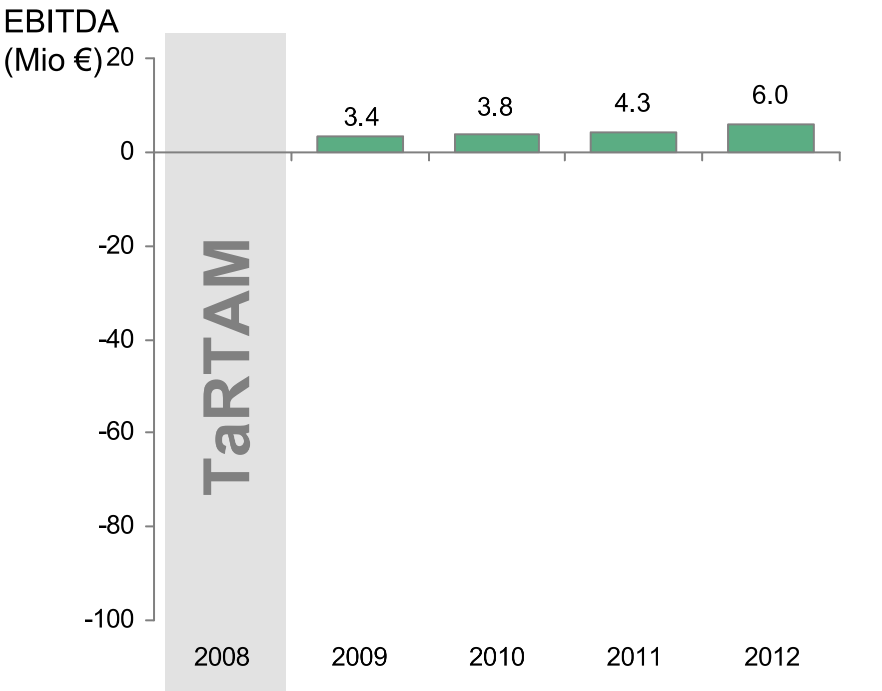
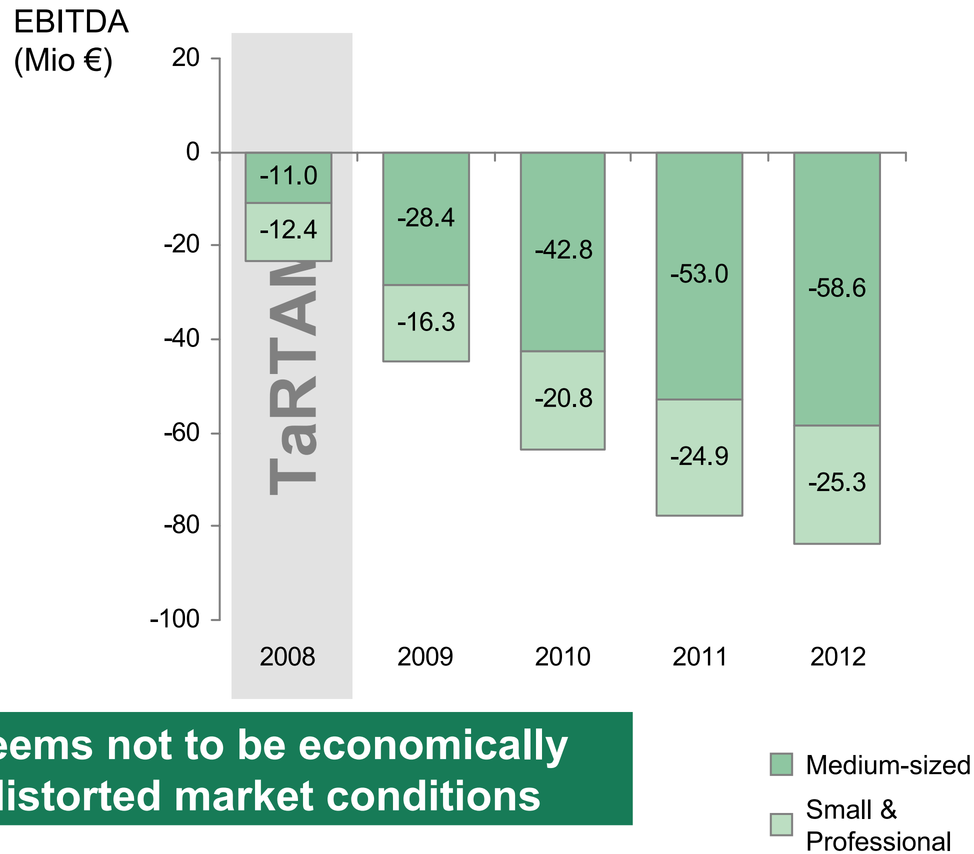
... with very disappointing economic results in the mass market

Annual EBITDA[1] per segment - estimates based on Poweo's recent financial results

Large clients



Medium-sized & Small clients



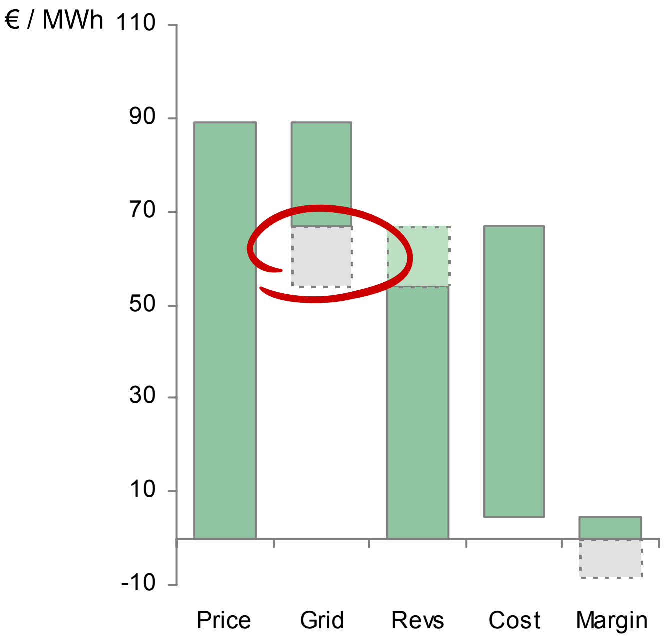
The French mass market seems not to be economically viable for Endesa due to distorted market conditions

1. EBITDA = Revenues - Energy related cost - Cost-to-serve - Current year acquisition costs
Note: Profitsin 2008 are capped at 0 due to the application of the TaRTAM
Source: Poweo financial accounts, BCG model, BCG analysis, BCG estimates

The market could turn profitable in three ways

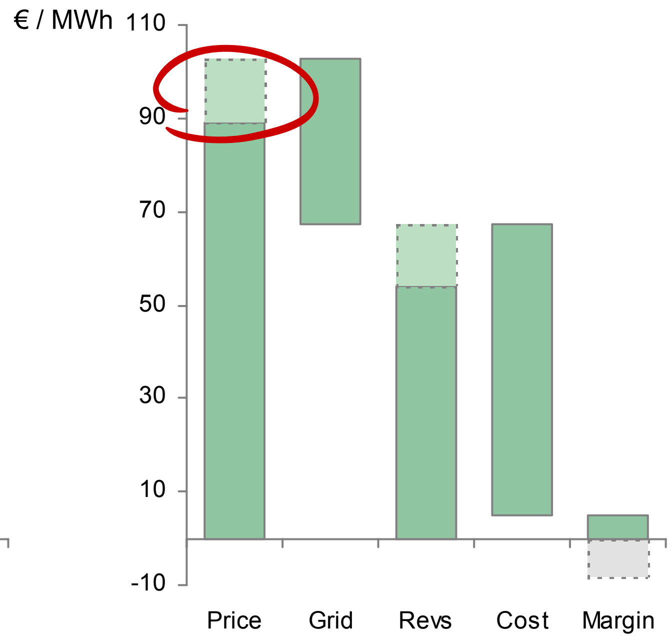
Possible changes leading to a positive gross margin (before cost-to-serve)

Lower grid charges



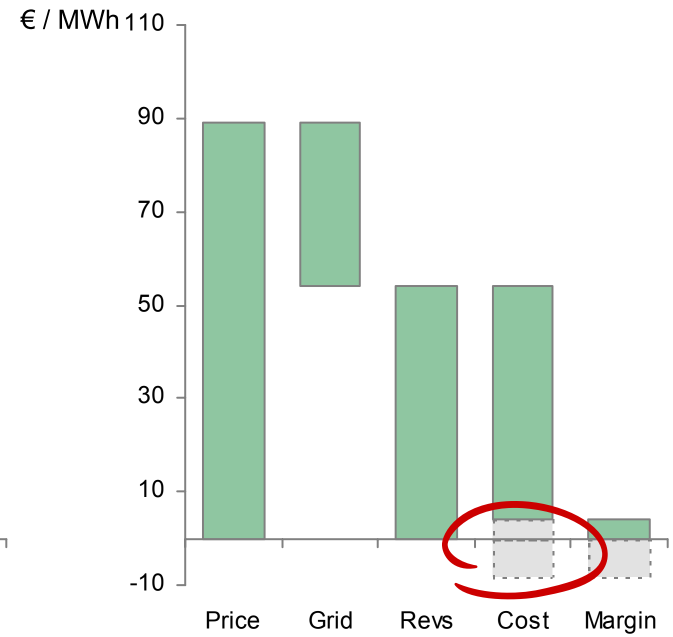
A 13€ reduction (37%) could lead to a 4,5€ gross margin (7%)

Higher end price



A 13,4€ increase (15%) could lead to a 4,9€ gross margin (7%)

Lower energy cost

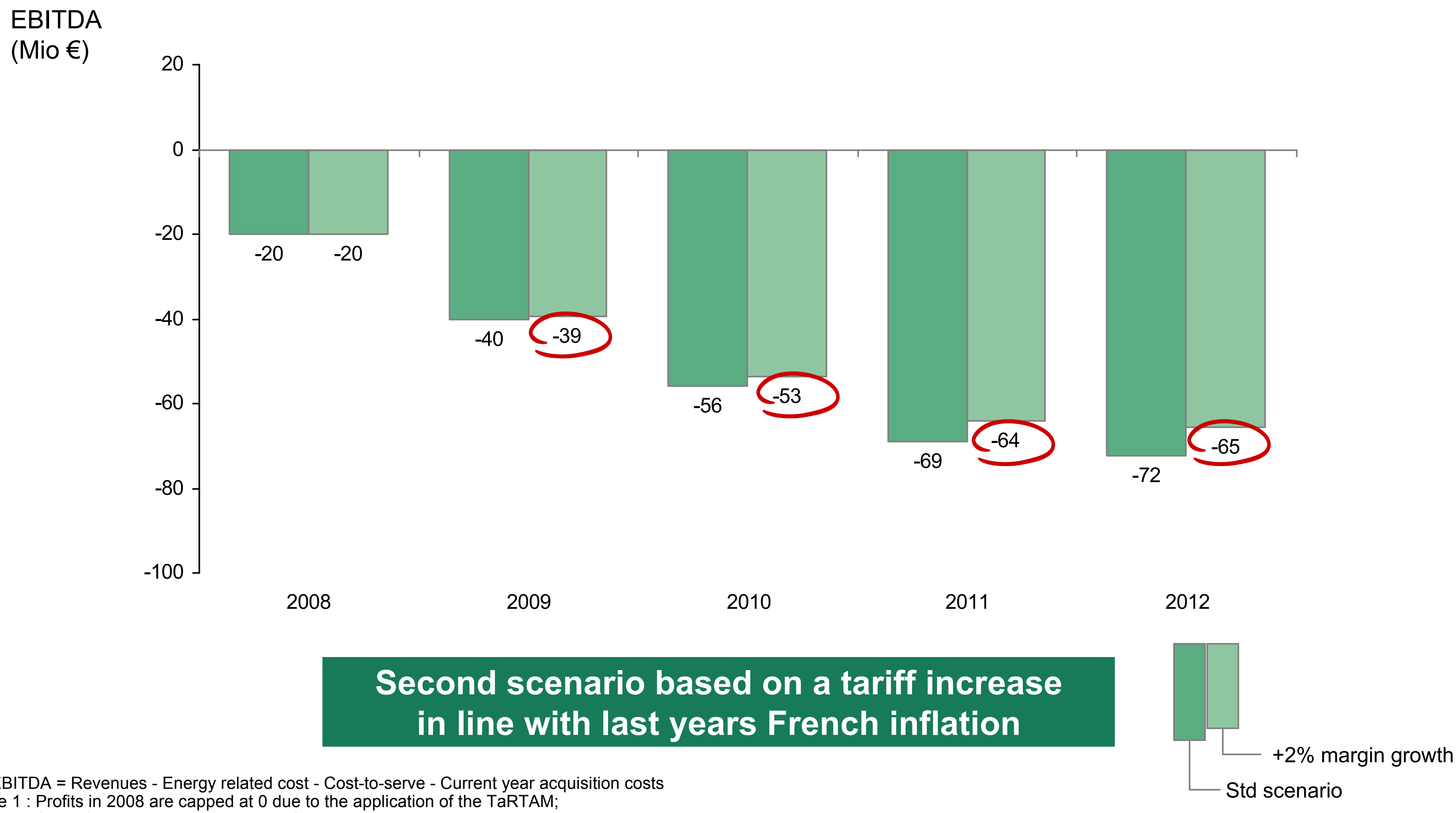


A 12,5€ reduction (20%) could lead to a 4€ gross margin (7%)

How likely are these scenarios?
What could be the time horizon?

Note: Average values for the period 2008-2012, based on "base" tariff, same price at all times; all values in €/MWh
Source: Powernext; broker reports; BCG analysis and estimates

EBITDA will remain negative considering a tariff increase equal to possible inflation rate



Second scenario based on a tariff increase in line with last years French inflation

1. EBITDA = Revenues - Energy related cost - Cost-to-serve - Current year acquisition costs
Note 1 : Profits in 2008 are capped at 0 due to the application of the TaRTAM;
Note 2 : Sum of Large, Medium-sized and Small clients
Source: Poweo financial accounts, BCG model, BCG analysis, BCG estimates

2

Year by year energy price in the capacity swap with EdF can be chosen, but overall energy price is defined by EdF (~38-40 €)

EdF is looking for peak energy

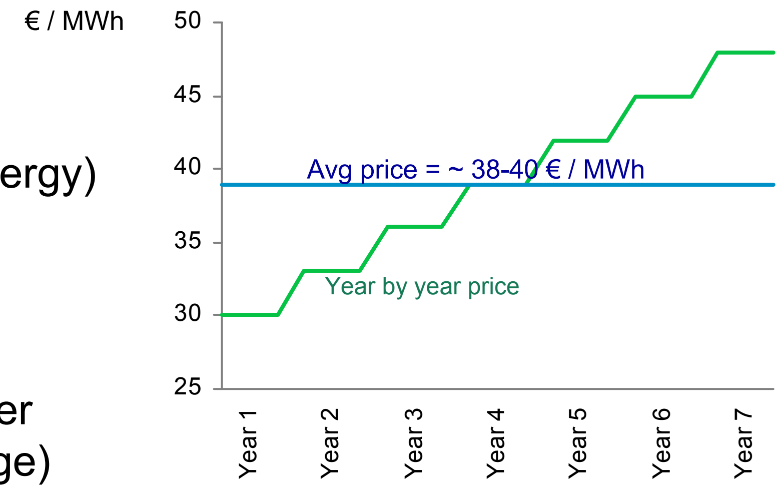
- EdF generation park is mainly related to base load capacity

EdF is pressured by the European Commission to increase the liberalization level of the French market

- EdF action to increase competitor presence in the power market is to offer energy swap
- EdF base-load capacity is swapped with new peak load capacity (CCGT) built by other players
- No off-peak vs peak capacity swap offered (solution more in line with competitor requests)

The EdF offer for the swap is standard

- Same capacity swapped by the two players
  - usually something like 150 – 200 MW (corresponding to 1.3 – 1.7 TWh base load energy)
- Average price along the full duration fixed by EdF
  - average price calculated by EdF as the base capacity price (~ 38-40 € /MWh)
  - year by year price could be defined by the other player (any distribution having the fixed average)

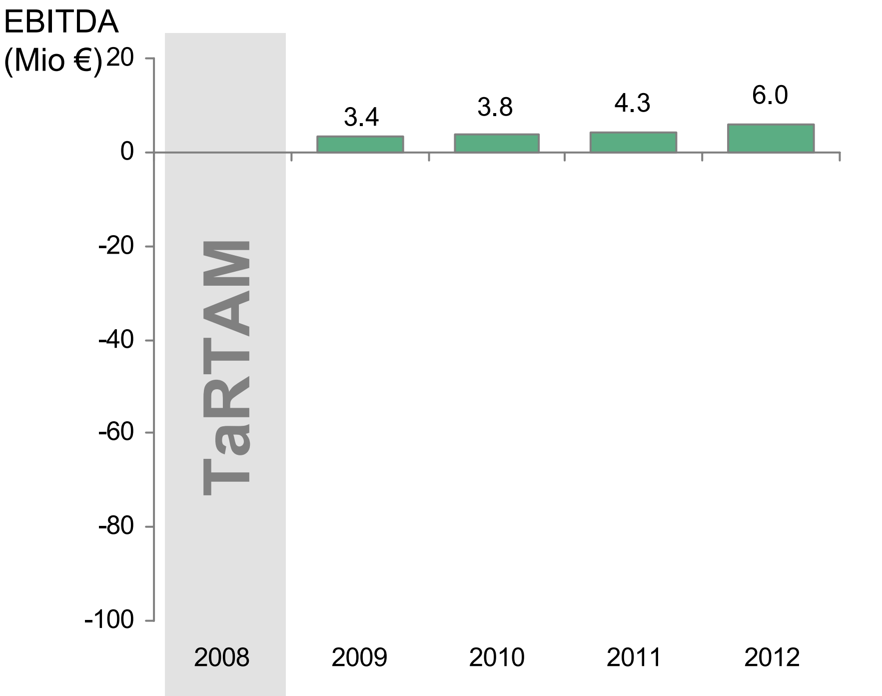


Draft – For discussion only

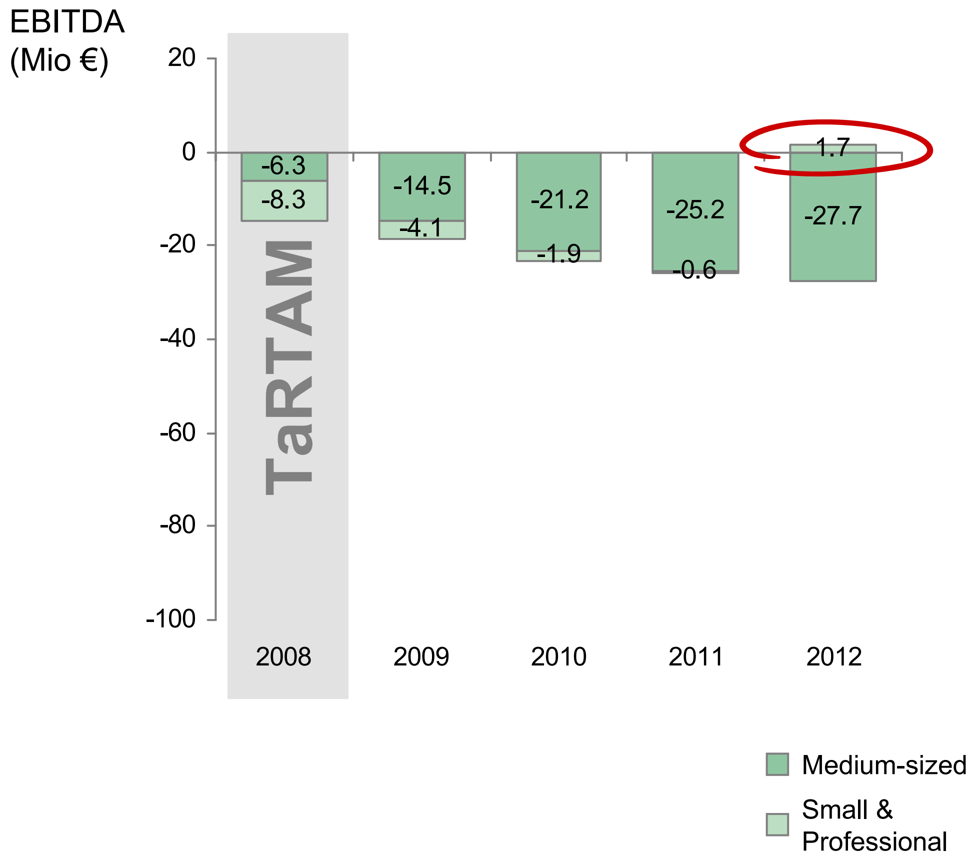
With cheap base-load, also small clients could turn profitable

Annual EBITDA[1] per segment – provided 5 TWh base load purchased at ~30 €/MWh

Large clients



Medium-sized & Small clients



1. EBITDA: Revenues – Energy related cost – Cost-to-serve – Current year acquisition costs
Note: Profits in 2008 are capped at 0 due to the application of the TaRTAM
Source: Poweo financial accounts, BCG model, BCG analysis, BCG estimates

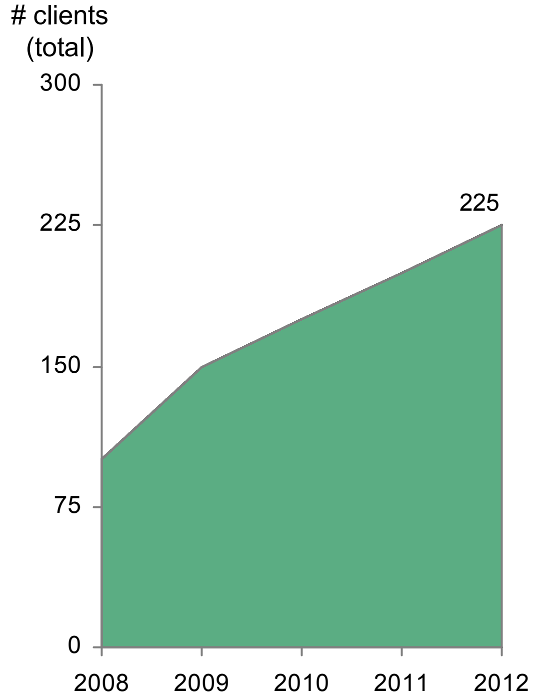
3

Draft – For discussion only

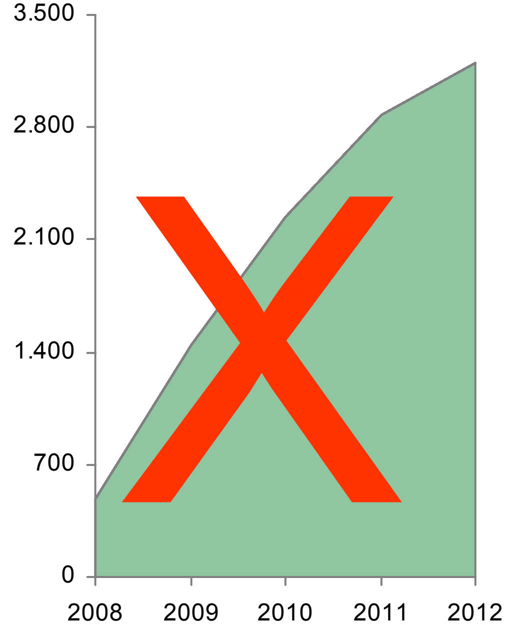
With no medium-sized clients, higher sales in the other 2 segments (I)

Possible client base growth 2008-2012

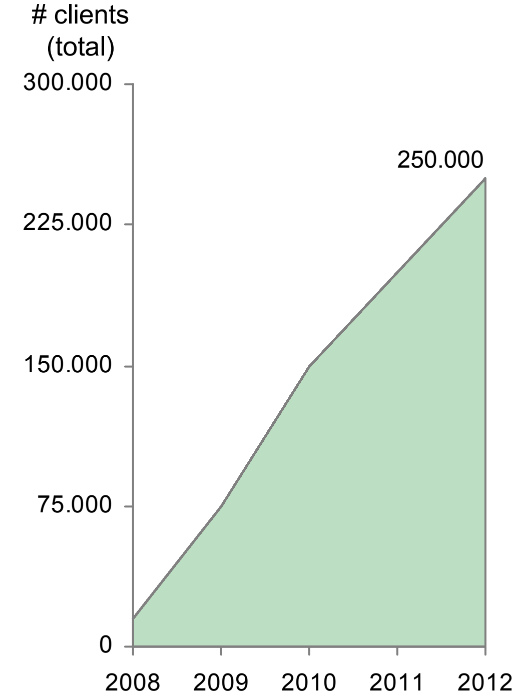
Large clients



Medium-sized clients



Small + SOHO clients



Note 1 : Number of "Large clients" is estimated dividing increasing volumes by flat average consumption; an alternative could be to have flatter number of clients, considering an increasing average consumption during the years
Note 2 : Small changes in the number of customers vs. the previous meeting
Source: BCG model, BCG analysis, BCG estimate

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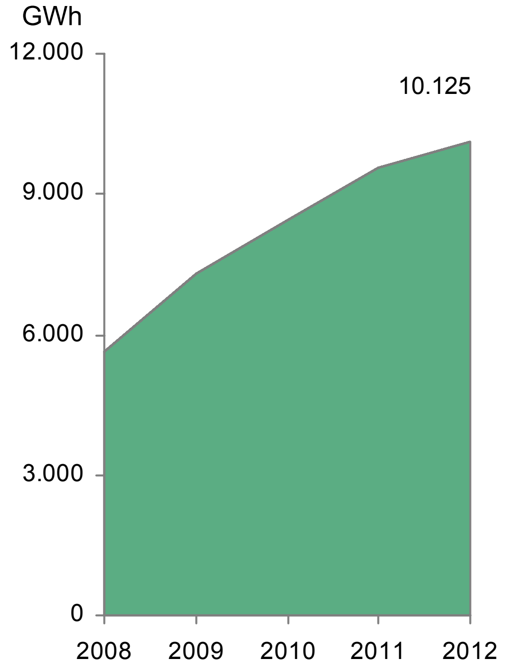
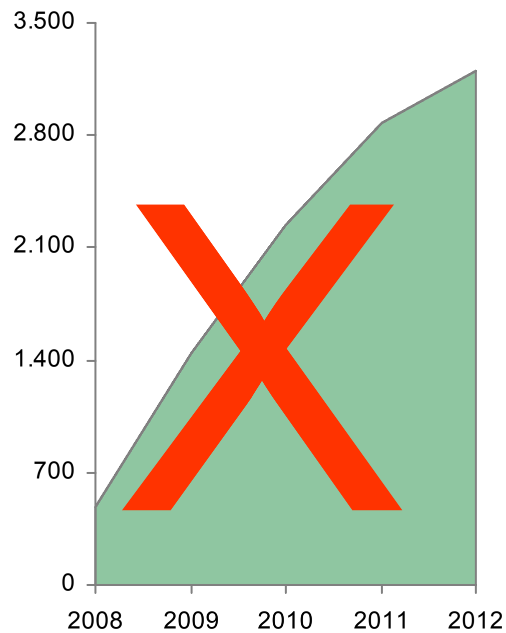
With no medium-sized clients, higher sales in the other 2 segments (II)

Possible sales volume growth 2008-2012

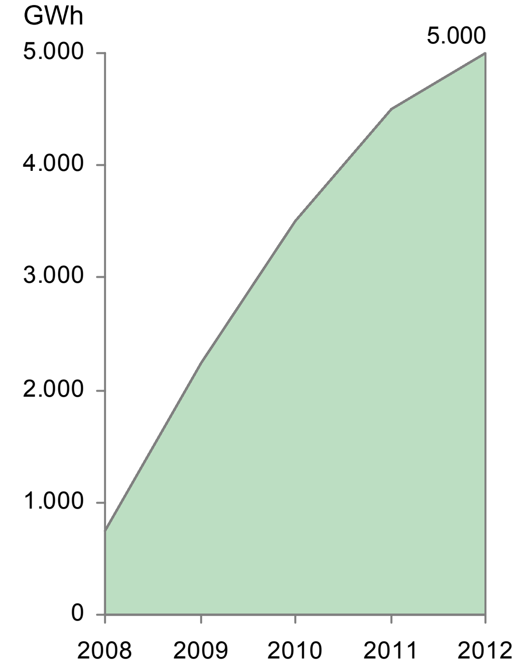
Large clients



Medium-sized clients



Small + SOHO clients



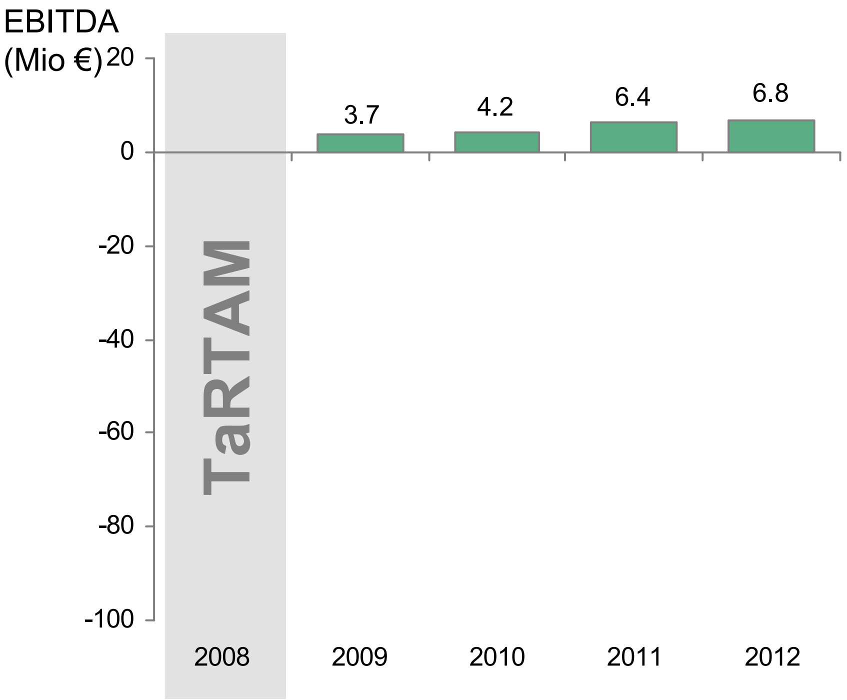
Note: Average consumption of large client ~45GWh; small ~20 MWh
Source: BCG model, BCG analysis, BCG estimate

Draft – For discussion only

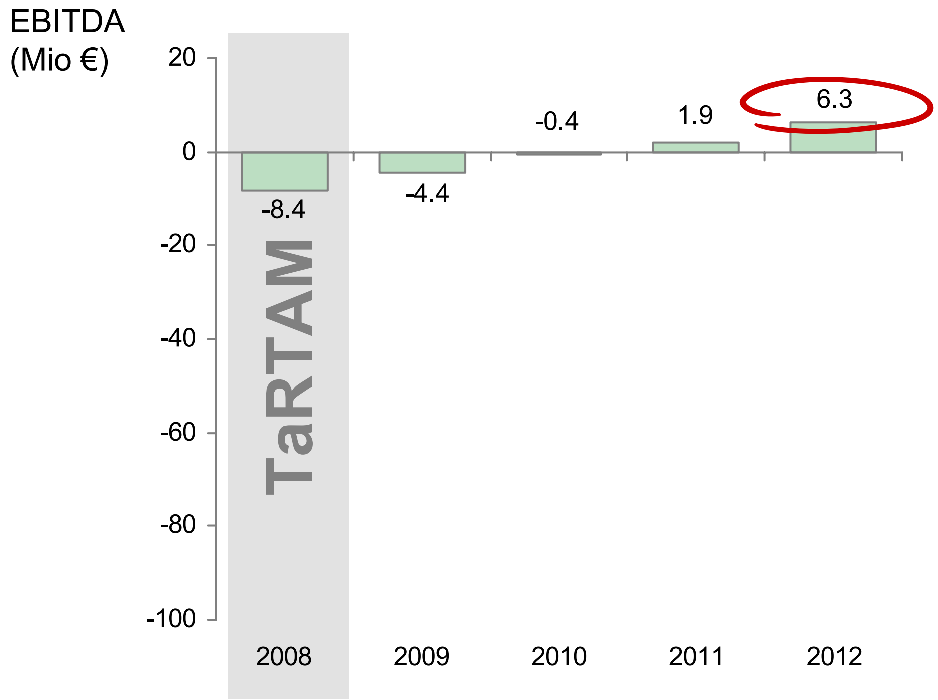
3

Avoiding "medium" customers and getting low price base make economical data very interesting

Large clients



Small clients & professional



Scale and cost-to serve drive retail profitability provided gross margins are positive

1. EBITDA: Revenues – Energy related cost – Cost-to-serve – Current year acquisition costs
Note: Profits in 2008 are capped at 0 due to the application of the TaRTAM
Source: Poweo financial accounts, BCG model, BCG analysis, BCG estimates

Decreasing acquisition costs and increasing scale effect makes the EBITDA improve year by year

	2008	2009	2010	2011	2012
Energy sold (GWh)	**6 375**	**9 563**	**11 938**	**14 063**	**15 125**
• Large clients	5 625	7 313	8 438	9 563	10 125
• Small Business / SOHO	750	2 250	3 500	4 500	5 000
Margin after cost-to-serve (K€)	**-2 447**	**5 844**	**8 978**	**13 899**	**15 108**
• Large clients	0	3 656	4 219	6 402	6 778
• Small Business / SOHO	-2 447	2 188	4 759	7 497	8 330
Acquisition costs (K€)	**6 000**	**6 600**	**5 200**	**5 600**	**2 000**
• Large clients	0	0	0	0	0
• Small Business / SOHO	6 000	6 600	5 200	5 600	2 000
EBITDA (K€)	**-8 447**	**-756**	**3 778**	**8 299**	**13 108**
• Large clients	0	3 656	4 219	6 402	6 778
• Small Business / SOHO	-8 447	-4 412	-441	1 897	6 330

Value creation not only through the commercial company, but also through additional value created in current activities

Value of the pure retail channel

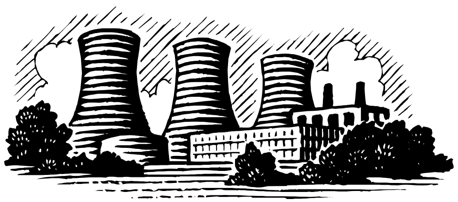
The commercial channel after a first phase will generate a positive cash flow

- Retail entry option will generate a new company that will soon increase its Enterprise value

Value of a retail channel in an integrated company

Generation park value might increase thank to retail activities

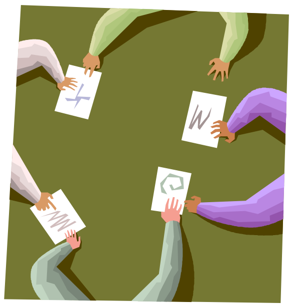
- Thank to the integrated structure the company will face a lower WACC due to lower risk rating



Value of a retail channel for the EM[1]

Having retail contracts allow the EM[1] to decide the most profitable energy supply

- In relation to the comparison between production costs and pool price, the Energy Management choose the cheapest source



1. Energy Management

The enterprise value of the retail company is ~150-190 Mio €

Considering scenario n.3

Value of the pure retail channel

2012 EBITDA — 13.1 Mio €

Multiple formula EV
- Cash flow[1] * multiple
- Avg market multiple — 11.5 – 12.0
- Enterprise value — 154.0

Perpetuity formula
- Cash flow[1] / WACC
- WACC — 6.1%
- Enterprise value — 214.9

150-215 Mio €

1. Applying perpetuity formula, with WACC = 7%

Source: Endesa-BCG team, BCG model, BCG analysis, BCG model

Agenda

French power retail market

Endesa France commercial strategy

- Methodology
- Poweo "business case"
- Analysis

Synthesis and next steps

Summary – Endesa France commercial strategy

1 **Endesa has a plan to produce around 20 TWh and to sell it with a certain breakdown ...**

- 10 TWh to final clients (6 to big, 4 to medium & small), acquiring other 5 TWh of off-peak
- 10 TWh to other markets (Tolling, spot, OTC, bilateral contracts)

2 **... that requires to entry in the medium and professional segment**

3 **According the economical evaluation and taking into account the current regulative situation, it is not profitable or sustainable to reach that target sales portfolio ....**

- EBITDA in 2012 with a loss of ~84 Mio € in the medium & professional segment
- The only segment with positive EBITDA would be the big clients with 3 Mio € (2012)

4 **... unless Endesa is able to achieve a very interesting swap for base load to a very low price**

- A swap with EdF could provide cheap base-load energy and might secure sales for new CCGT production
- Considering the swap, energy cost could decrease and at least professional segments could turn profitable

Summary – Endesa France commercial strategy

5 Recommended strategy: Not to loose the dream of becoming and integrated company with a more balanced portfolio

- The best scenario should be :
  - to change the target sales breakdown (2012) allocating higher volumes to large clients and Tolling
  - to study the professional business (preparing to enter when possible)
  - to sign an agreement with EdF for a capacity swap peak vs base load

6 "Wait and see" solution also supported by the forecast that French market will not reach soon high saturation levels

- The only players that are publishing residential market entry are Poweo and Direct Energy
  - Poweo estimated energy sales are 10-13 TWh in 2010
  - Even in case Direct Energy would do the same, the sum of the two is a bit above the 6% of the market
  - GdF is the only player whose strategy is currently unclear
- These forecast dynamics are far from what is expected to happen in the Italian market
  - Enel forecast in Italy in 2011 that 85% of the energy will be traded in the free market
  - Sorgenia's target is 6-7% of professional market in 2010
  - ENI's target is 5% of the residential segment in 2011