

June 2011



## Akkok Group Companies

### CHEMICALS

AKSA, AK-KİM

### ENERGY

AKENERJİ, SEDAŞ

### TEXTILES

AK-AL, AK-TOPS, AKSA EGYPT

### REAL ESTATE DEVELOPMENT

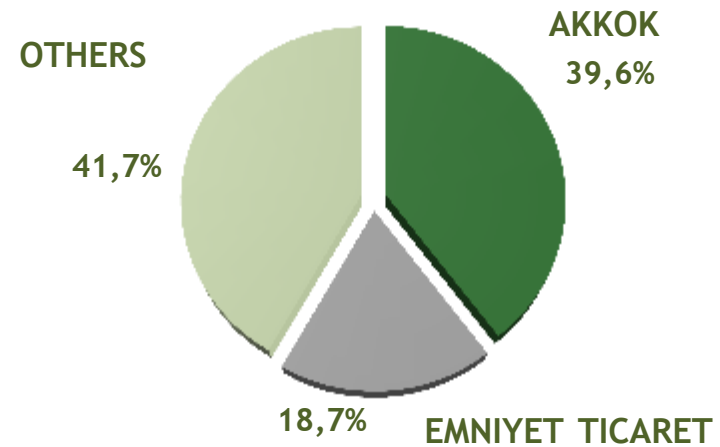
AKMERKEZ, AK TURİZM, AKİŞ

### OTHER SERVICES

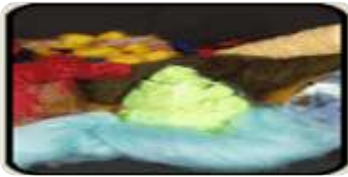
AK-PA, DİNKAL, AKPORT, AKTEK,  
AKMERKEZ LOKANTACILIK (Paper Moon)



AKKOK (Million US\$)	2006	2007	2008	2009	2010
Net Sales	1,314	1,337	1,514	2,166	2,400
Export	342	346	326	332	372



# STRATEGIC BUSINESS UNITS of AKSA ACRYLIC



## STANDARD ACRYLIC FIBER BUSINESS UNIT

- Largest acrylic fiber producer under one single roof in the world;
- 13.2% global market share;
- Turkey's sole local producer having 69% local market share.



## TECHNICAL FIBERS BUSINESS UNIT

- High value-added products / Develop fibers for technical end-use areas;
- Targeting increase the share in total sales from 7% to 10% by 2015;
- Planned investment for 2011-2015 ; 20-25 Million US\$.



## CARBON FIBER BUSINESS UNIT

- Aksa initiated an alliance with the American Dow Chemicals by signing a Memorandum of Understanding on 6 June 2011.
- Current capacity, 1,500 tonnes per year will be increased to 3,500 tonnes by July 2012.
- Strategic goal; 5% market share by 2015 & 10% by 2020.



## ENERGY BUSINESS UNIT

- Acquired 70 Mwe capacity Natural Gas power plant from Akenerji;
- Currently investing in 100 Mwe capacity dual gas power generation plant;
- Commissioning of the plant will be at the end of this year1.

# **ACRYLIC FIBER BUSINESS UNIT**

# WHAT IS ACRYLIC FIBER?

Acrylic fibre is a synthetic fibre that highly resembles wool,



Wool (natural fiber)



Acrylic Fiber (synthetic fiber)

- Used in blends with natural and other synthetic fibers or by themselves,
- Easily washed and keep dimensional stability/resistant against sunlight & chemical substances,
- Dyed in brilliant colours,
- Natural and warm appearance and touch.



## HAVING 42 YEARS OF EXPERIENCE IN ACRYLIC FIBER INDUSTRY...

- Leader in Turkey and in international markets in terms of capacity, size, pre-and post-service quality, product diversity & flexibility;
- Low cost leader;
- Production capacity : 308,000 ton/year;
- Capacity Utilization Rate:86% in 2010, 93% for 2011Q1

## SUCCESS THAT COMES FROM A DIVERSITY OF PRODUCTS...

### Major Acrylic Fiber Uses;



Apparel

Home Textiles & Furnishings

Industrial Uses



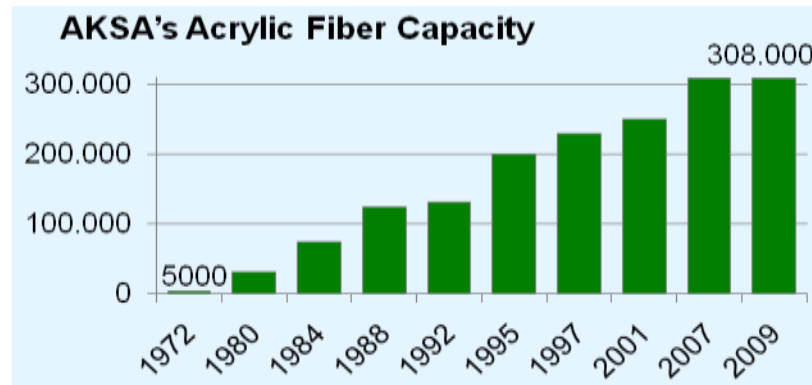
# AKSA's Development Over 40 Years



**AKSA 1971**  
Initial Capacity 5,000tpa



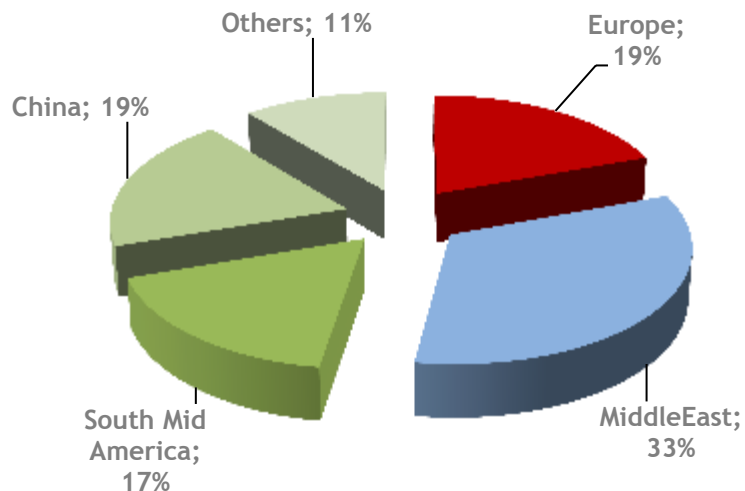
**AKSA Today**  
Capacity 308,000tpa



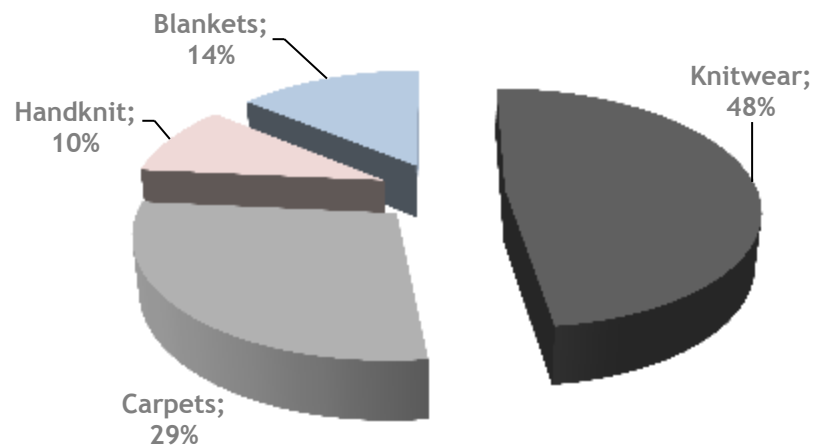
By the end of 2007, capacity reached 308,000 tonnes/year.

# 2010 / SALES BREAKDOWN

## EXPORT SALES BREAKDOWN



## DOMESTIC SALES BREAKDOWN



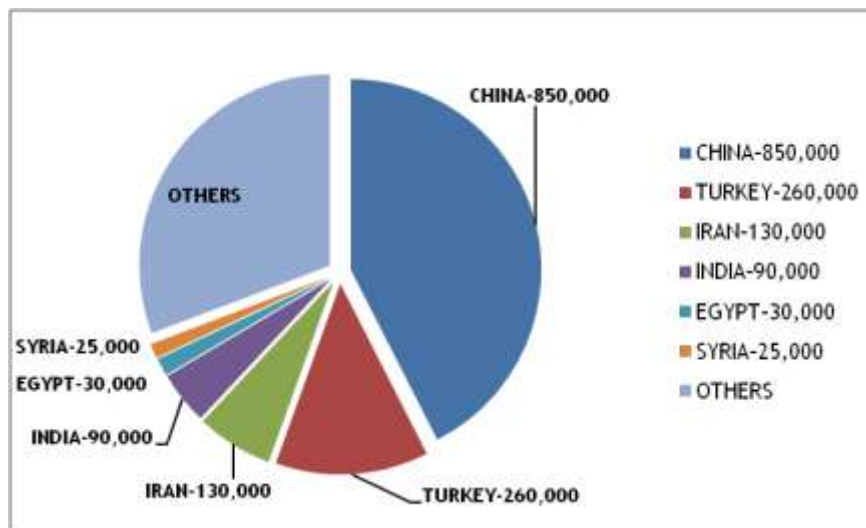
In Europe, the technical acrylic fiber market has strengthened compared to standard acrylic fiber market. Share of sales volume of technical & special fibers to the region has increased from 10% to 18% by 2010.



# ACRYLIC FIBER SECTOR IN BRIEF



- Acrylic fiber market accounts for 2 million tonnes in 2010,
- Biggest Consumption Markets



- China adopts self sufficiency strategy/invests on new capacity no more, During 2007-2010 China market shrank by 20%.
- Sector has 20% idle capacity, Europe accounts for excess capacity, Far East balanced capacity and demand, Shut downs (Europe, USA, Far East...) and consolidations have taken place for last 10 years.



# ACRYLIC FIBER INDUSTRY PLAYERS

• **AKSA**

• **MONTEFIBRE (SPAIN)**

• **DRALON (GERMANY)**

• **FISIPE (PORTUGAL)**

• **BIRLA (THAILAND & EGYPT)**

• **JILIN (CHINA)**

• **SHANGHAI PETROCHEMICALS (CHINA)**

■ Jilin and MonteFibre founded JiMont by forming an alliance, Jilin Qifeng and Jimont, 2 factories, have a cumulative production capacity of 240,000 tonnes,

■ In 2009, MonteFibre shut down the last facility in Italy, They only produce 95,000 tonnes in Spain,

■ Dralon has production capacity of 187,000 tonnes/year,

■ Birla increased production capacity at Egypt, from 18,000 tonnes to 38,000 tonnes in 2010, Facility at Thailand (Thai Acrylic Fibre) has 100,000 tonnes of capacity,

■ Although Jilin and SPC (China) are big firms, they are not direct competitors to AKSA.

# THREAT OF SUBSTITUTES

GLOBAL PRODUCTION OF TEXTILE FIBERS ( 1000 TONNES )											
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	AGR
<b>Synthetic Fibers</b>	32.101	31.686	33.907	35.511	37.953	38.165	41.277	44.523	42.640	44.600	3,70%
Polyester	19.073	19.244	20.956	22.258	24.406	24.701	27.808	31.094	30.650	32.400	6,10%
PP fibers	5.984	5.815	5.913	6.159	6.303	6.463	6.473	6.444	5.940	6.100	0,20%
Polyamide	4.063	3.745	3.947	3.992	4.017	3.865	3.883	3.895	3.510	3.480	-1,70%
Acrylics	2.669	2.555	2.742	2.678	2.743	2.632	2.535	2.446	1.930	2.020	-3,00%
Aksa %	8,0%	8,3%	8,4%	9,3%	10,0%	10,7%	11,7%	10,8%	12,6%	13,2%	2,30%
<b>Others</b>	312	327	349	424	484	504	578	644	610	600	7,50%
<b>Cellulosics</b>	2.755	2.692	2.715	2.855	3.096	3.138	3.296	3.592	3.235	2.950	0,80%
Cotton	19.749	19.814	20.623	20.120	21.974	24.398	25.707	26.704	24.450	22.300	1,40%
Wool	1.250	1.180	1.357	1.274	1.219	1.231	1.227	1.218	1.210	1.190	-0,50%
Jute	4.015	3.065	3.222	3.232	3.179	3.250	3.200	3.200	3.300	3.240	-2,40%
Linen	463	588	721	773	751	792	770	780	800	820	6,60%
Ramie	130	179	201	269	269	250	250	250	250	250	7,50%
Silk	86	82	92	97	115	133	145	156	150	150	6,40%
<b>TOTAL</b>	60,549	59,286	62,838	64,131	68,556	71,357	75,872	80,423	76,035	75,5	2,50%
<b>acrylic share / total textile fibers</b>	4,40%	4,30%	4,40%	4,20%	4,00%	3,70%	3,30%	3,00%	2,50%	2,70%	
<b>acrylic share / total synthetic fibers</b>	8,30%	8,10%	8,10%	7,50%	7,20%	6,90%	6,10%	5,50%	4,50%	4,50%	

Substitutes compete with price differentiation, Preference of acrylic fiber is sustained until price difference is 1 US\$/kg. During 2000-2009, while the annual growth rate of acrylic fibermarket is -3% , Aksa's annual production growth rate is 2.3%.

Assuming that the world population will continue to rise, it is estimated that natural fiber production increases will be limited and there will be above-average, pa 5.9% growth in synthetic fiber demand over 10 years. The global demand for acrylic fiber in 2020 is expected to be around the same level as 2 million tonnes.

# COST STRUCTURE OF ACRYLIC FIBER

## **The key cost component is the raw material Acrylonitrile**

- Acrylonitrile prices fluctuates depending on the oil prices and the demand - supply balance;
- 30% of ACN locally sourced from PETKIM, The rest is heavily imported from Europe .

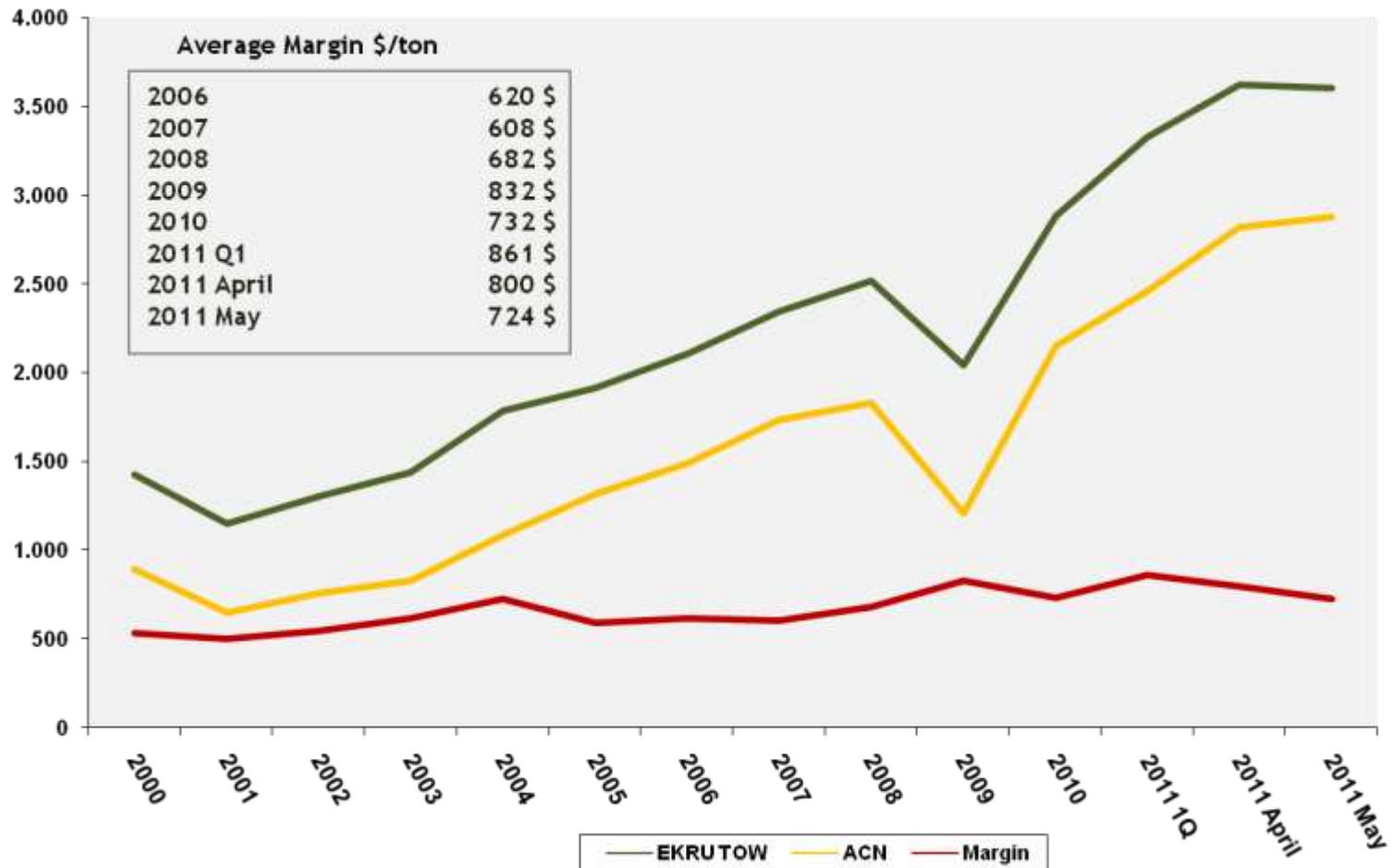
## **The other important cost component is “The Energy”,**

- Continuously improving energy specific consumption through investments;

## **Labor Costs**

- High rate of production per capita;
- Low labor rate compared to European competitors.

# ECRU TOW - ACN PRICE MARGIN (US\$/ton)

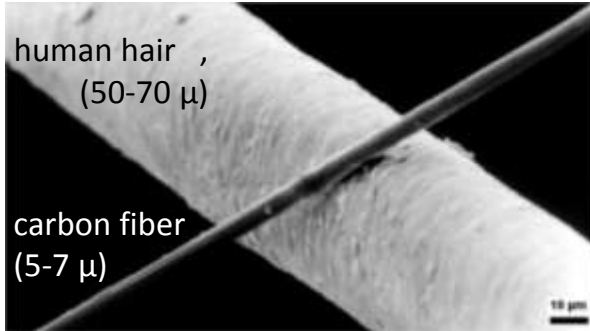


Source: PCI Average of US/Europe/Far East Prices

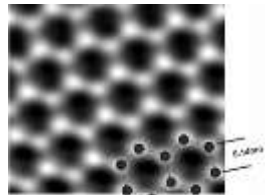


# **CARBON FIBER BUSINESS UNIT**





a carbon fiber and a human hair  
(source: wikipedia)



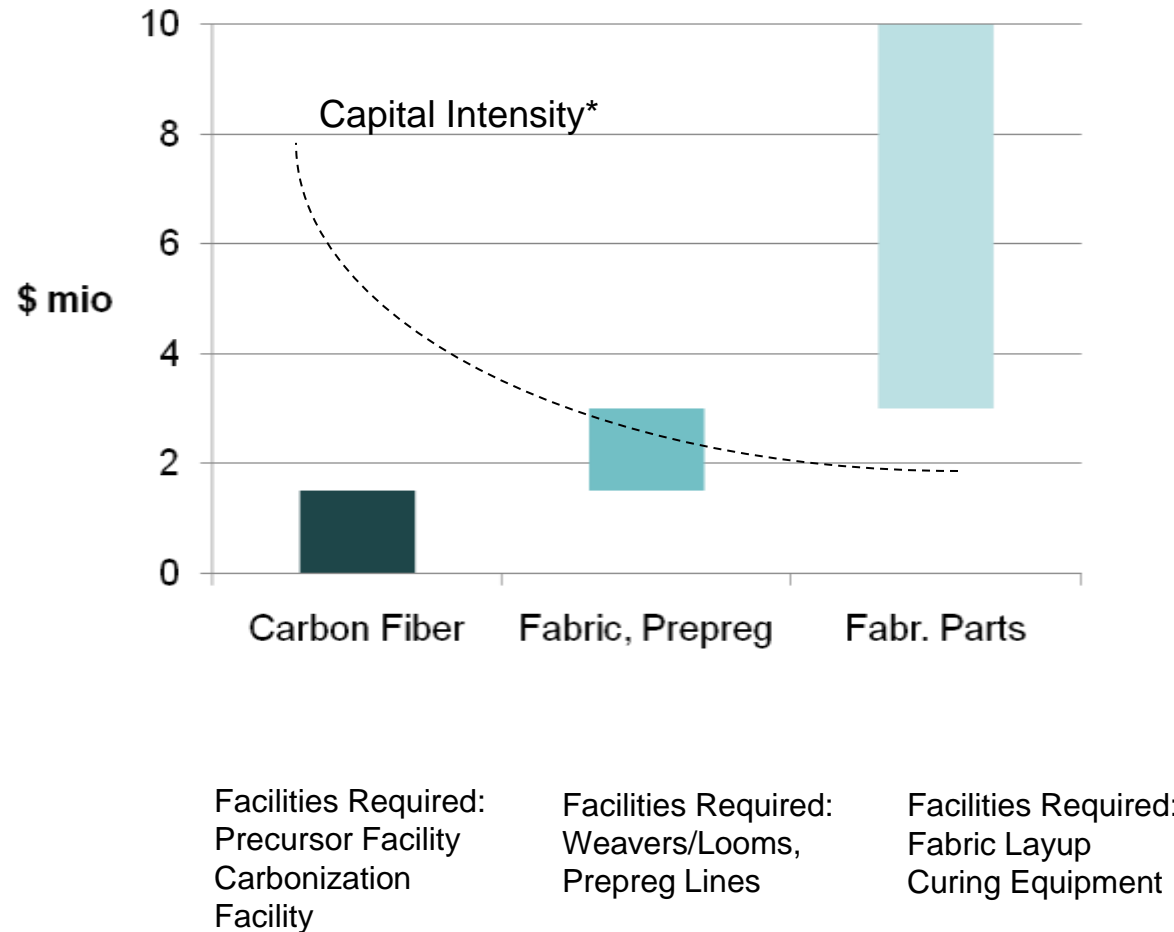
graphene sheet  
(source: wikipedia)

- Carbon fibers are extremely fine fibers (typ, 5-7  $\mu$  in dia,) consisting mostly of carbon atoms,
- Carbon fiber is >95% carbon,
- The structure of carbon fiber is similar to graphite: sheets of carbon atoms, arranged in hexagonal patterns, aligned along the axis of the fiber,
- Carbon fibers are produced in tows (yarns) ranging from 1,000 filaments (1k), to 3k, 6k, 12k, 24k, 50k, etc.



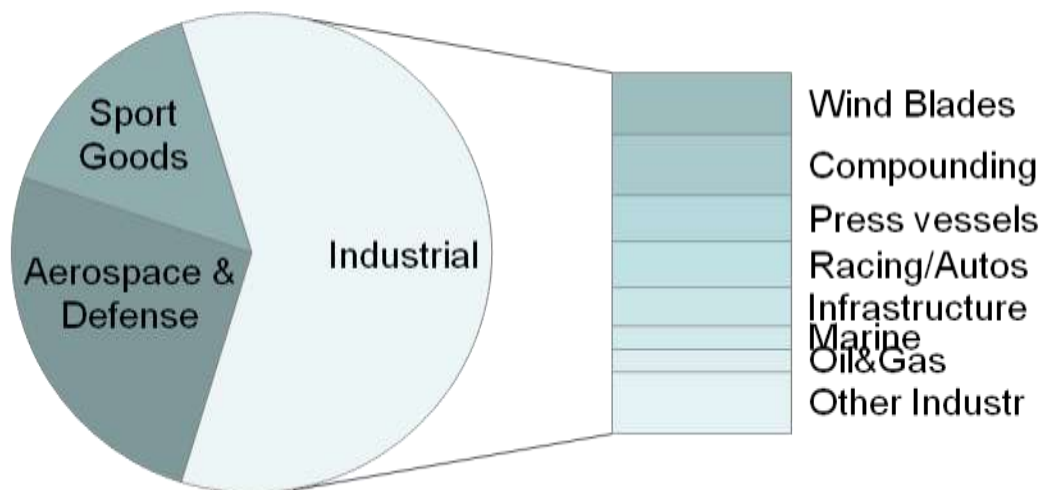
↙  
↘ "3k"  
= 3,000  
filaments

# CARBON FIBER, COMPOSITE MATERIALS & COMPOSITES IS A \$10 BILLION INDUSTRY



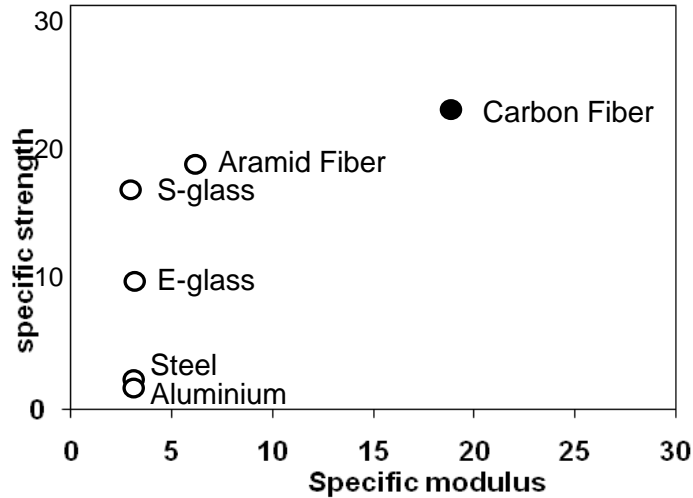
\*Investment required in technology and production facilities,

**Current Demand for Carbon Fiber**  
**< 40.000mt p.a.; > US\$1B**

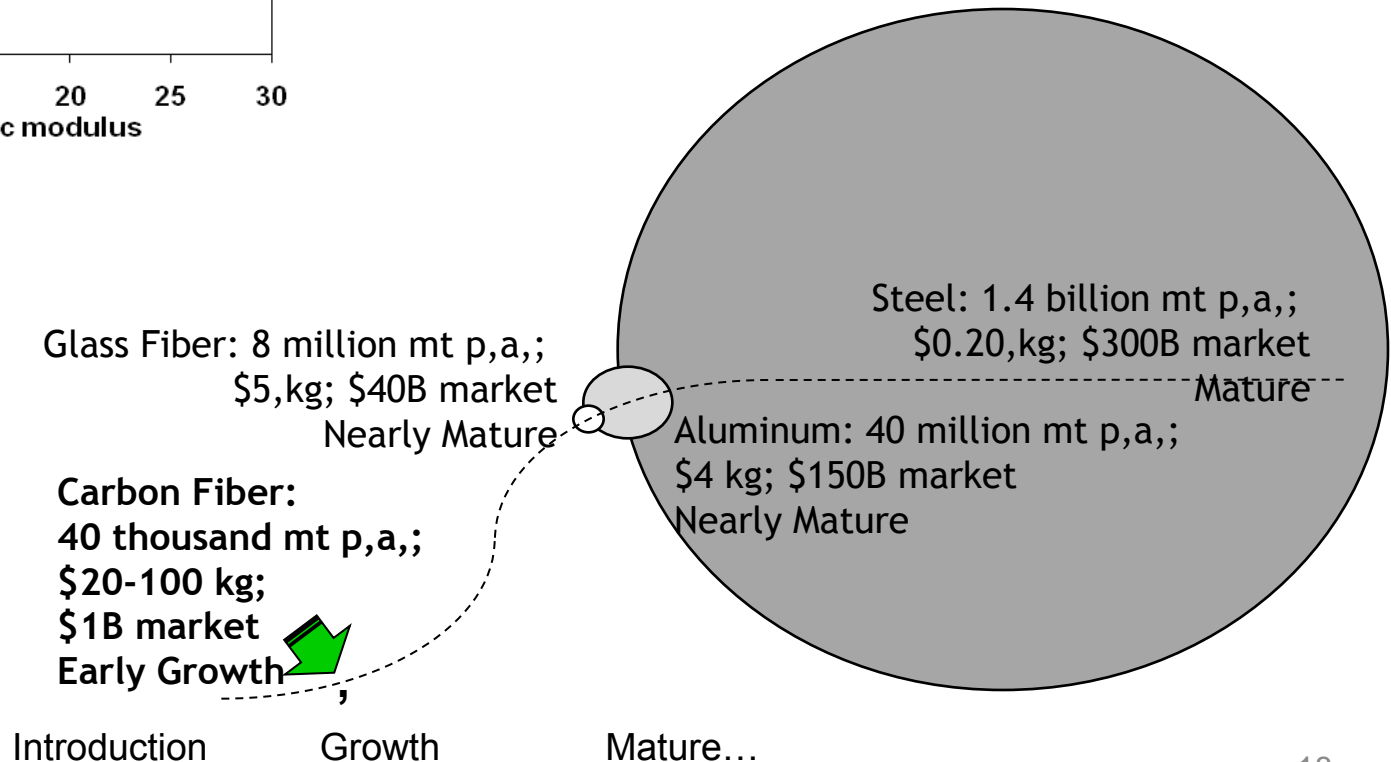


**AKSA is targeting  
Industrial Applications**

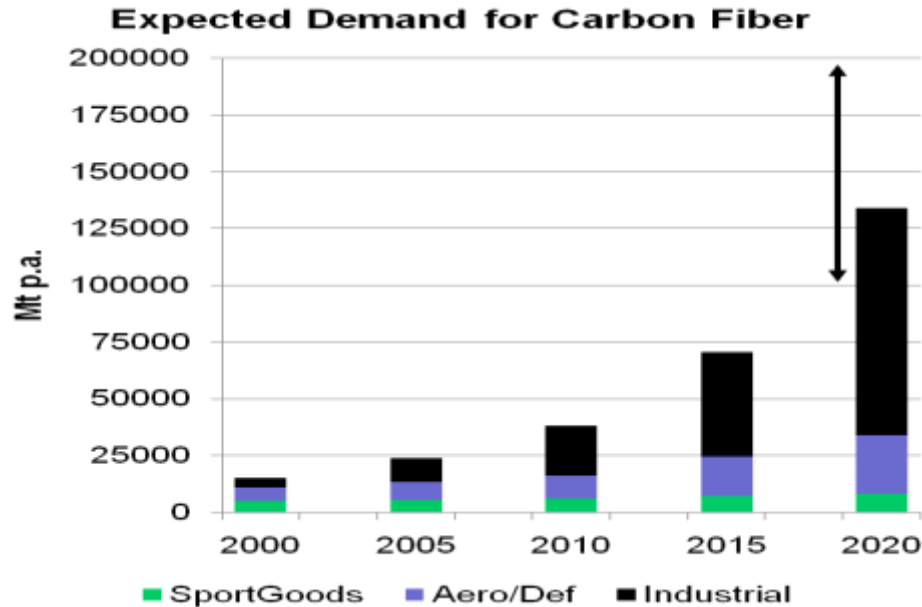




- Carbon Fiber is a structural reinforcement with high specific strength and stiffness,
- High specific tensile strength
- High specific elastic modulus
- Light in weight & strong







Carbon fibre demand was around 20,000 tonnes in 2004, The demand than doubled in the four years to 2008, We expect the market (currently 40,000 tonnes) to double by 2015 and double again by 2020.

Industrial Applications are expected to make up the majority of future demand.

mt	2010	2015	2020
Market for Carbon Fiber	40,000	75,000	140,000



## Industrial Apps

2010 vs 2020:

### Wind:

5,000t → 15,000-50,000t

### Compounding:

5,000t → 15,000-50,000t

### Pressure Vessels:

3,000t → 15,000-50,000t

### Autos:

2,500t → 20,000-100,000t

### Infrastructure:

2,000t → 5,000-25,000t

### Others:

5,000t → 15,000-50,000t

## Aerospace Apps

2010 vs 2020:

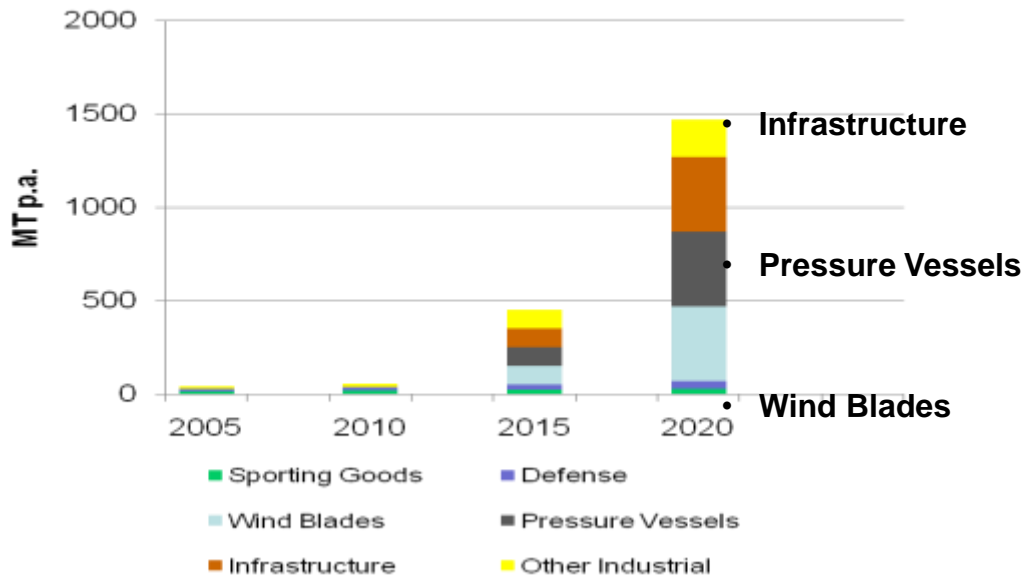
8,000t → 25,000-30,000t

## Sports Goods

2010 vs 2020:

7,000t → 10,000-15,000t

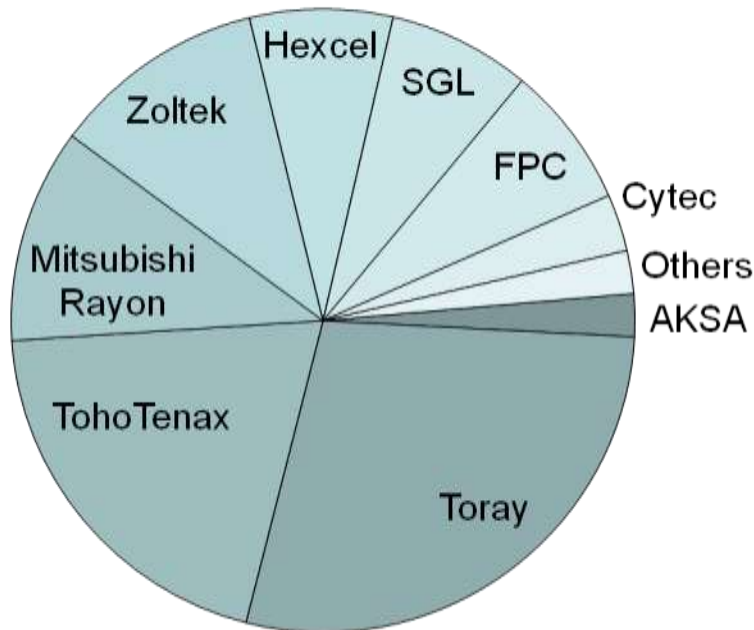
# EXPECTED GROWTH IN DEMAND FOR CARBON FIBER IN TURKEY



Demand for Carbon Fiber in 10 years is expected to be 1,000-1,500 mt. p.a. in Turkey.

Aksa's target is to support the increased use of carbon fiber based composites in Turkey. Considering the very undersized local market for carbon fibre of only around 50-70 tonnes/year, Aksa is in touch with the government to create a "Composite Valley" near Yalova.

## Carbon Fiber Capacity

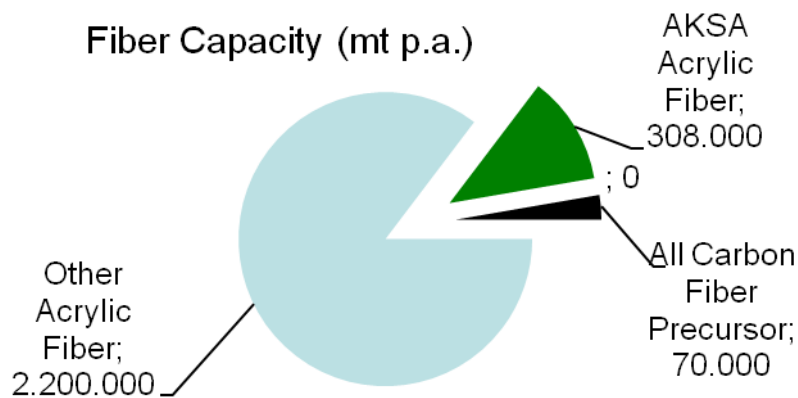


### AKSA's observations on the carbon fiber market:

- Carbon fiber has been available commercially since the 1970's,
- Demand has grown irregularly depending on new applications,
- Tight supply conditions have occurred every few years,
- There appears to be an “un-met need” for carbon fiber that is:
  - High quality
  - Reliably supplied
  - Competitively priced
 for Industrial Applications.

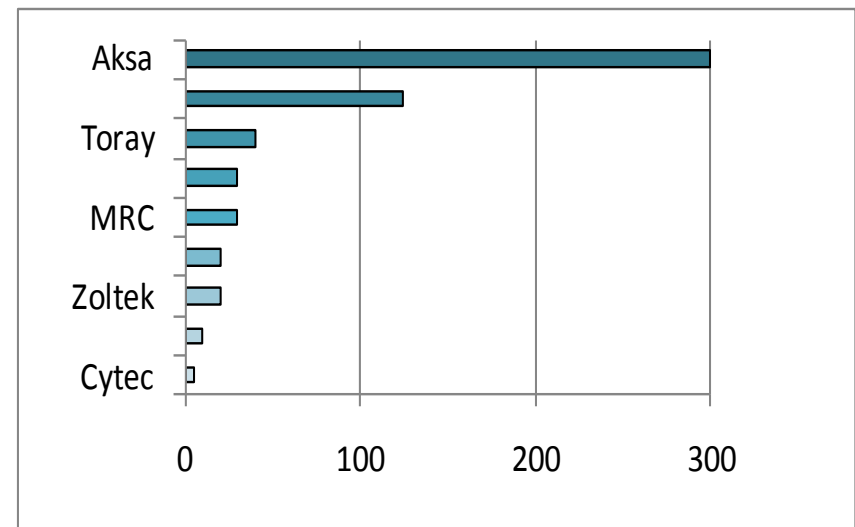


Having the world's largest capacity for acrylic fiber production under a single roof, AKSA's infrastructure is unmatched by any carbon fiber producer.



AKSA is uniquely positioned to offer high quality, reliably supplied, competitively priced carbon fiber.

**Acrylic Fiber and Precursor Capacity of Carbon Fiber Producers (000mt)**



- Production capacity; 1,500 tpa,
- Capital Intensive - Initial capital cost of a precursor and carbon fiber production facility is very high, depreciation is significant,
- Half of cost is linked to the price of oil - Acrylonitrile and the energy to convert and process it into carbon fiber,
- AKSA's Advantages in Yalova;
  - Well facilitized and operated acrylic fiber factory,
  - Large scale facility ,
  - Technically oriented workforce,
  - Low cost labor.

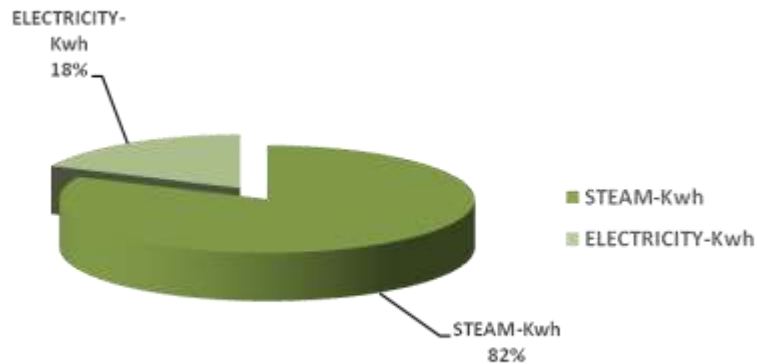


- Targeting industrial applications where high quality, reliably supplied; competitively priced carbon fiber is wanted;
- Intending to further develop our portfolio of products over time;
- Support the increased use of carbon fiber based composites in Turkey;
- Aksa initiated an alliance with the American Dow Chemicals by signing a Memorandum of Understanding on 6 June 2011. The sides will cooperate with the intent to form a joint venture to manufacture and globally commercialize carbon fiber and derivatives. The companies will examine opportunities to develop and market a broad range of products and technical service offerings in the carbon fiber-based composites industry.
- Aksa will increase capacity from 1,500 tonnes per year today to 3,500 tonnes by July 2012 (both increasing the capacity of current line by 300 tpa and construction of new line with 1,700 tpa )

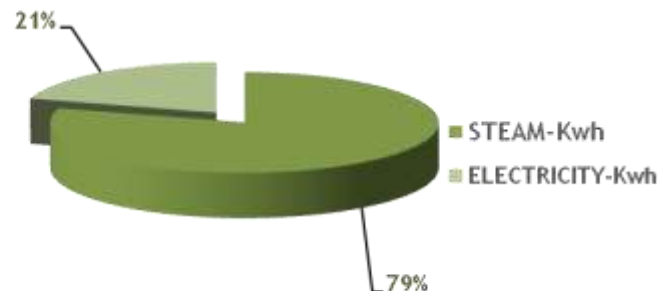
# **ENERGY BUSINESS UNIT**

# ENERGY PRODUCTION & TURNOVER

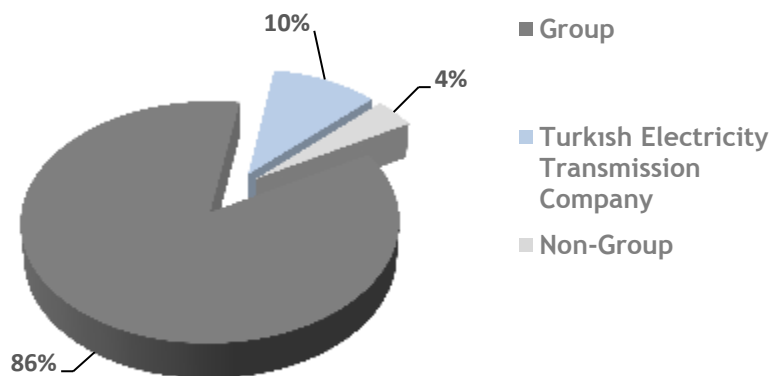
PRODUCTION (2011-Jan-May) Kwh



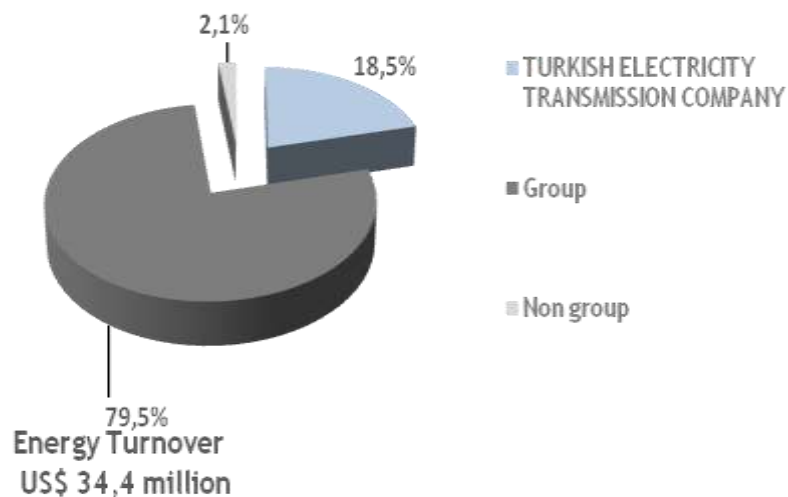
PRODUCTION (2010) KWH



ENERGY TURNOVER (2011 JAN-MAY)



ENERGY TURNOVER (2010)



## LONG-TERM MAIN STRATEGIC GOALS (2015)

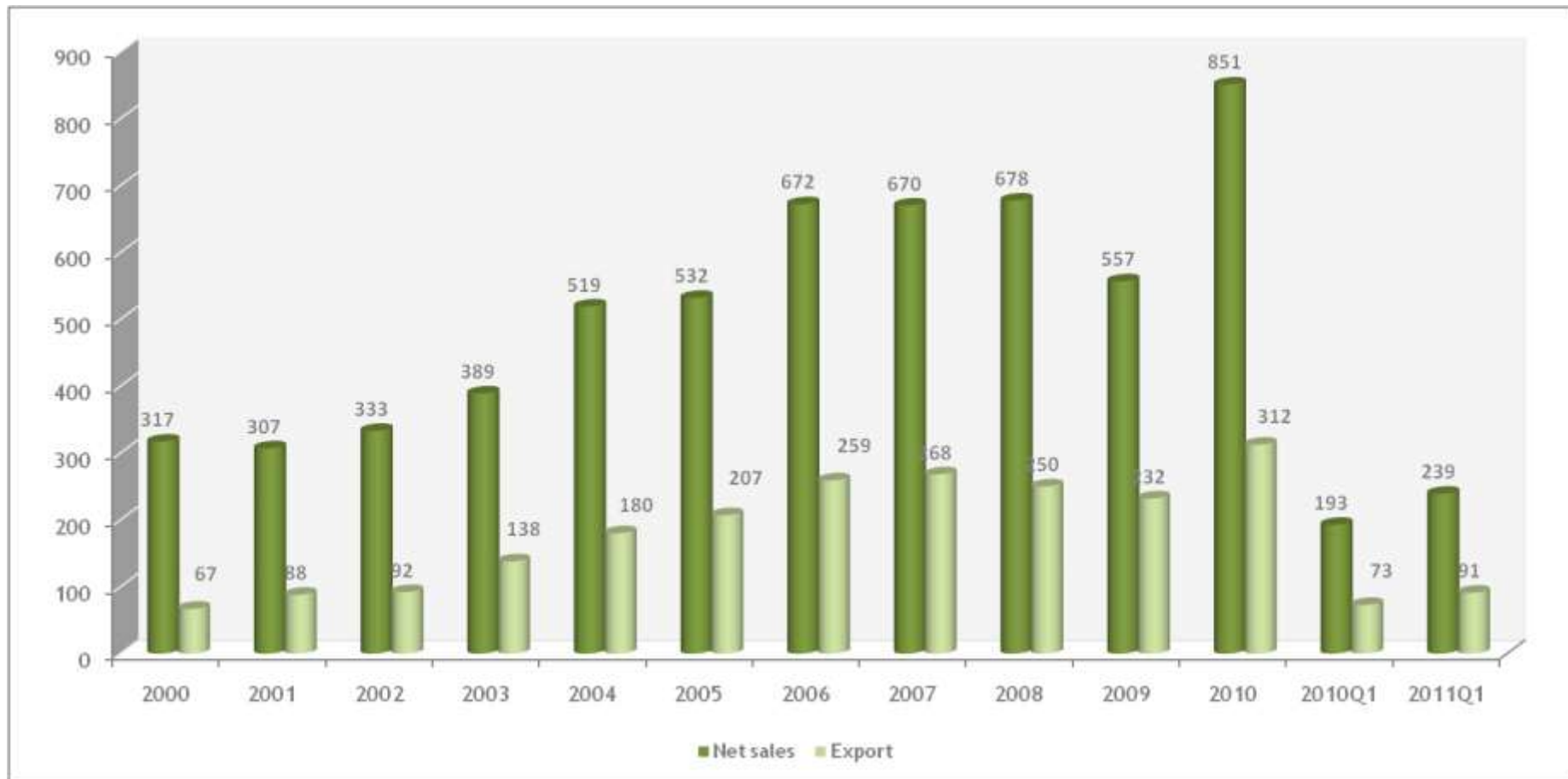
- Generate at least US\$1.1 billion sustainable revenue in its Strategic Business Areas,
- Achieve at least 15% EBITDA margin,
- Maintain capacity utilization in Acrylic Fiber Business and low-cost leadership through cost saving projects,
- Target 5% market share in Carbon Fiber in 5 years and 10% market share in 10 years,
- Achieve at least 30-35% EBITDA margin in Carbon Fiber Business Area,
- Develop a downstream industry in Turkey for Carbon Fiber,
- Develop new technical fibers to create added value and end-use areas except textile industry.

## 2011 BUDGET FIGURES

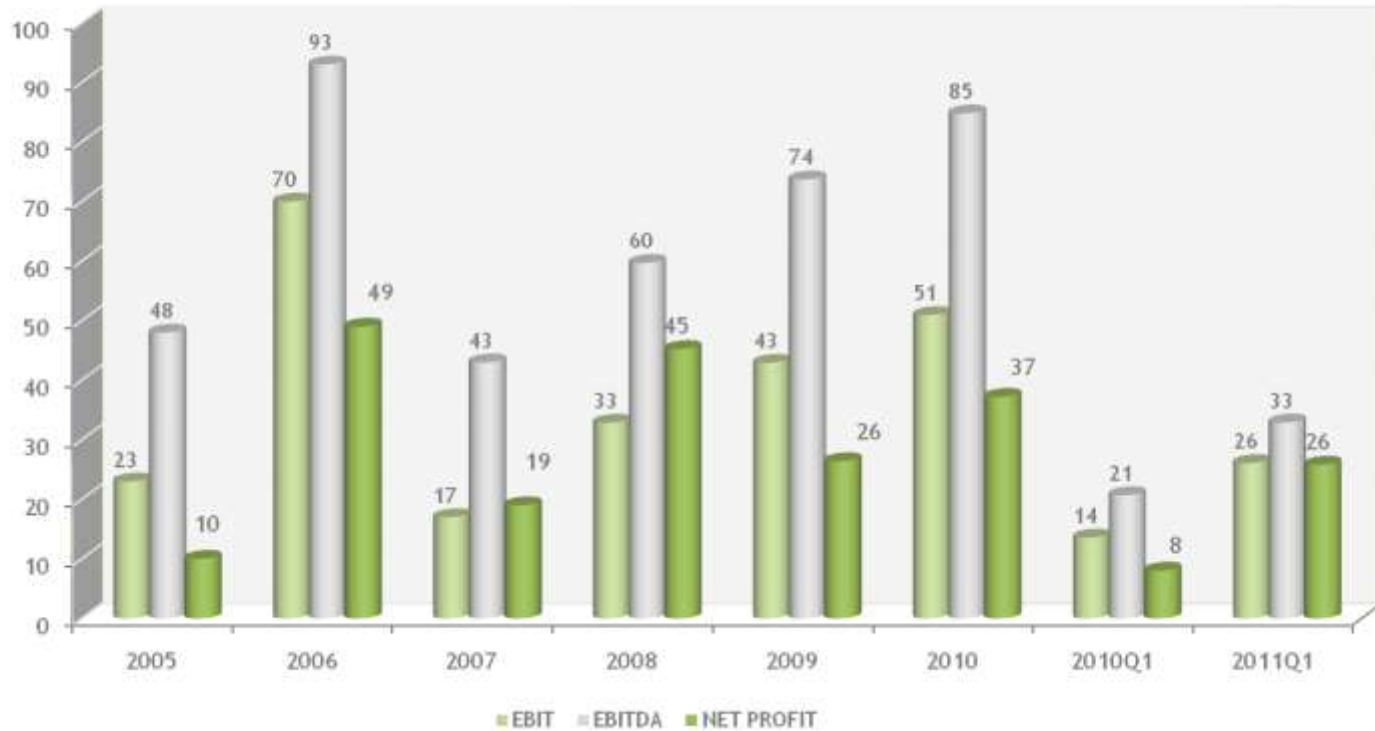
<b>Net Sales</b>	<b>US\$ 950-1.000 Milllion</b>
<b>AF</b>	<b>US\$ 850-880</b>
<b>Technical Fibers</b>	<b>US\$ 60-65</b>
<b>CF</b>	<b>US\$ 25-28</b>
<b>Energy</b>	<b>US\$ 40-45</b>
 <b>Exports</b>	 <b>US\$ 350-375 Milllion</b>
 <b>AF CUR</b>	 <b>85%-90%</b>
 <b>EBITDA margin</b>	 <b>10%-12%</b>
 <b>CAPEX</b>	 <b>US\$160-170 Million</b>



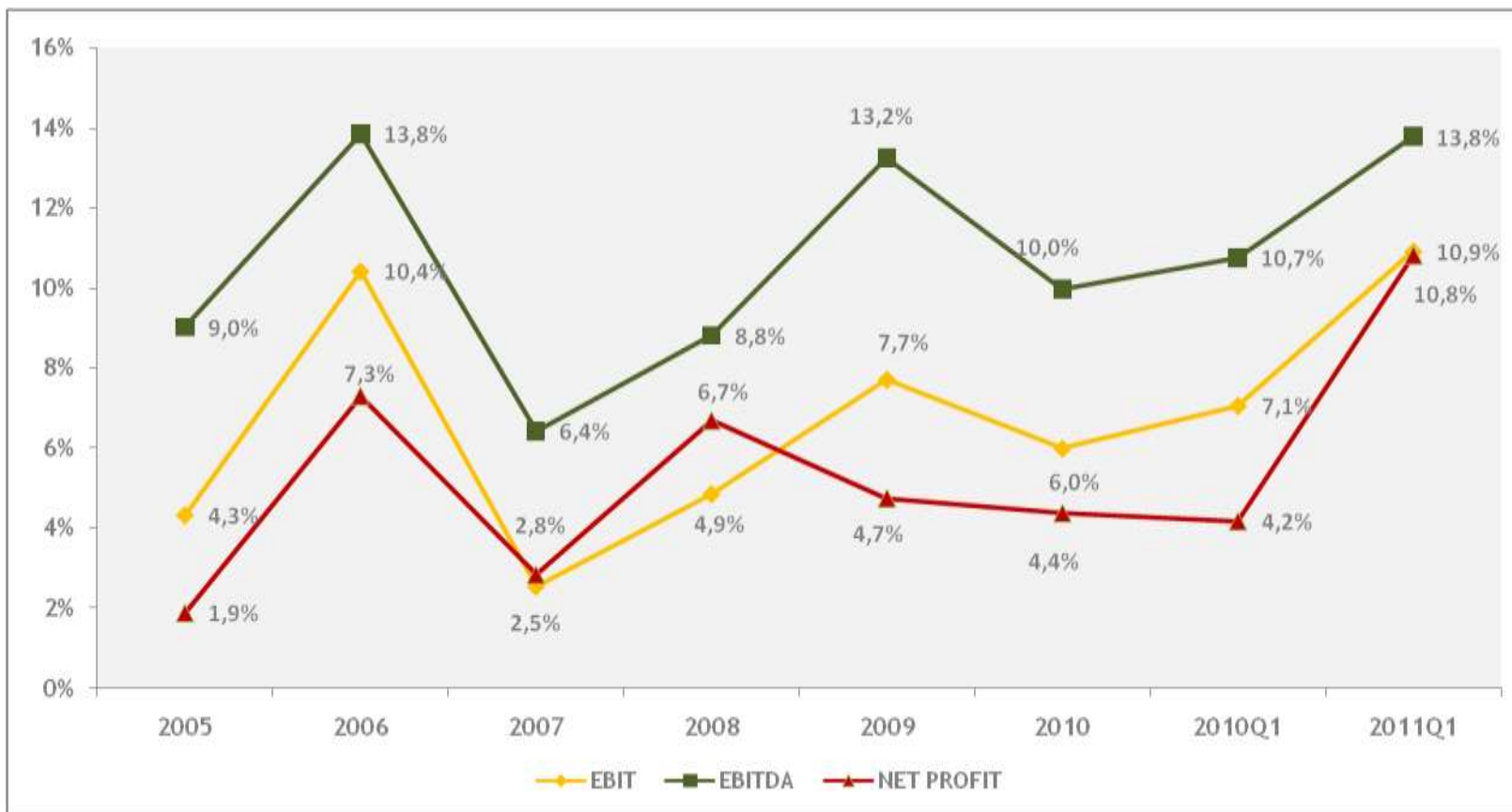
# NET SALES & EXPORT (FOB) (US\$ million)



# EBIT - EBITDA - NET PROFIT (US\$ million)



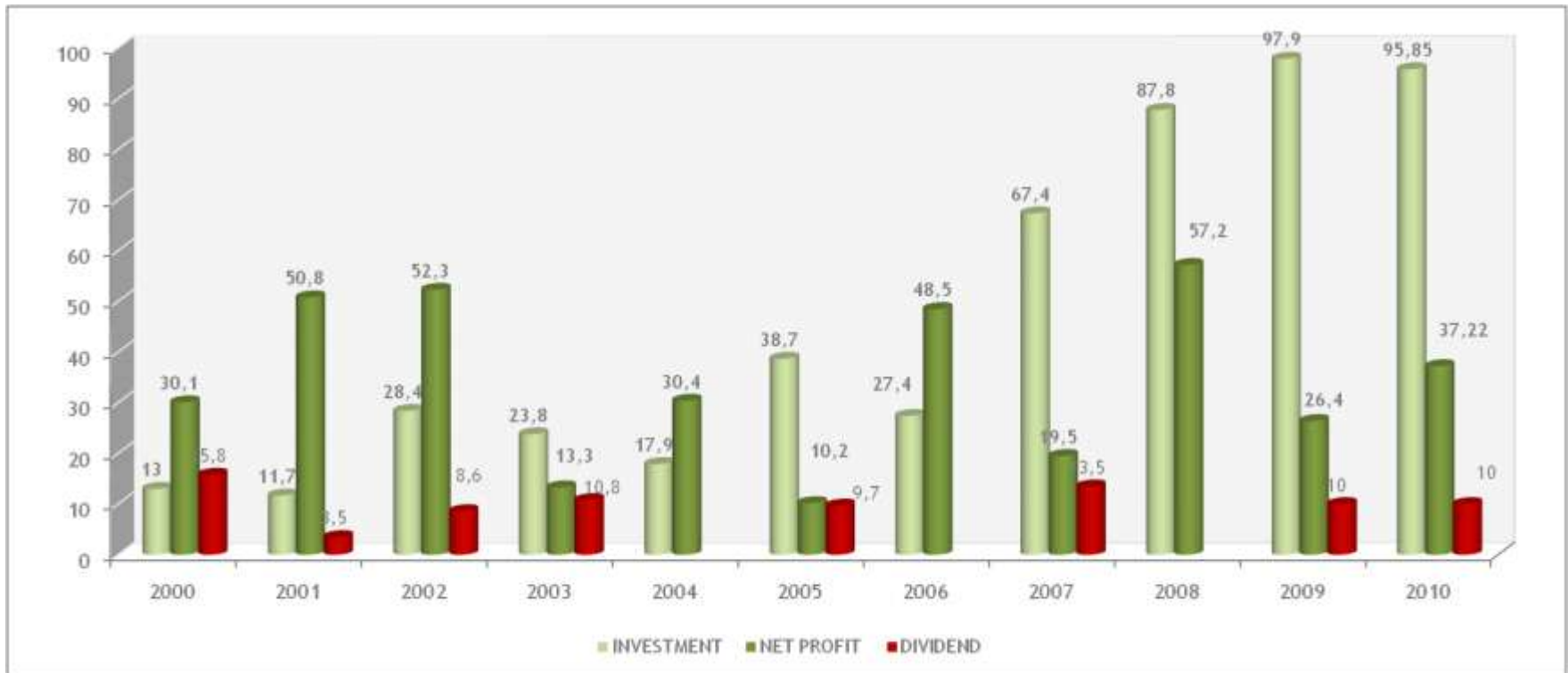
# EBIT -EBITDA - NET PROFIT (%)



# INVESTMENT-PROFIT-DIVIDEND

2000-2010:

- Total Investment : US\$ 509,85 million
- Total Net Profit : US\$ 376,92 million
- Total Dividend : US\$ 81,90 million



# INCOME STATEMENT

Income Statement ('000 US\$)	2007	2008	2009	2010	2010Q1	2011Q1
Net Sales	669.507	677.540	556.747	851.029	192.600	239.046
EBITDA	43.286	59.703	73.716	84.806	20.702	32.907
EBIT	16.555	32.872	42.918	50.945	13.584	26.087
NET PROFIT	19.458	45.238	26.413	37.217	8.029	25.819

# BALANCE SHEET

Balance Sheet ('000 US\$)		2008	2009	2010	2011Q1
<b>ASSETS</b>		<b>707.481</b>	<b>808.967</b>	<b>836.241</b>	<b>928.770</b>
Current Assets		376.237	390.652	388.060	445.747
	Liquid Assets	26.685	64.003	36.832	69.303
	Receivables	264.282	218.251	211.656	201.816
	Inventories	63.738	73.592	88.627	119.460
	Other	21.532	34.806	50.945	55.169
Long Term Assets		331.244	418.316	448.181	483.023
	Long Term Trade Receivables	8.375	7.792	6.179	5.719
	Financial Assets	17.945	18.024	17.554	17.528
	Tangible Assets	281.527	353.984	416.635	442.672
	Intangible Assets	128	4.393	3.344	2.934
	Other Long Term Assets	23.269	34.123	4.469	14.171
<b>LIABILITIES</b>		<b>707.481</b>	<b>808.967</b>	<b>836.241</b>	<b>928.770</b>
Current Liabilities		158.370	209.146	227.168	294.319
	Financial Liabilities	66.719	87.856	85.478	79.763
	Trade Payables	75.029	109.854	134.669	199.239
	Derivative Financial Instruments	1.362	0	0	0
	Other Short Term Liabilities	15.260	11.436	7.021	15.317
Long Term Liabilities		100.070	121.144	117.949	117.360
	Financial Liabilities	80.070	91.253	90.108	90.108
	Trade Payables	0	1.697	0	
	Derivative Financial Instruments	3.098	2.515	3.234	2.981
	Provisions for Debt and Expenses	4.923	6.306	7.218	6.672
	Deferred Tax Liabilities	9.044	9.478	8.679	9.076
	Other Long Term Liabilities	2.934	9.895	8.709	8.523
<b>Shareholders' Equity</b>		<b>449.041</b>	<b>478.677</b>	<b>491.124</b>	<b>517.091</b>



**THANK YOU**

<http://www.aksa.com>  
<http://www.aksaca.com.tr>