



Konya Industry Structure and Studies in the field of Nuclear Energy

Mücahit Yasir KINALI
İstanbul Nuclear
Power Plants Summit
2014



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Where we are?



Konya is the largest city in Turkey with **38.873 km² area.**

Comes 7th in Turkey with 2.100.000 population.
(2,7% of Turkey's Population)



Who we are?

- Mevlana Development Agency is a regional governmental organization. Our Agency was established by the council of ministers decision, numbered 2008/14306 and dated 22 November 2008, on the basis of “Establishment, Coordination and Missions of Development Agencies” law dated 25.01.2006 and numbered 5449. MEVKA is one of the 26 development agencies in Turkey, founded with the Law 5449.
- Development agencies are public legal entities aiming to reduce the inter-regional and intra-regional disparities, to create a sustainable and competitive regional economy and to accelerate the regional development by mobilizing the local potential by developing the corporation between public, private sector and NGOs. MEVKA is operating in TR52 NUTS 2 region, having its center in Konya and covering Konya and Karaman provinces.



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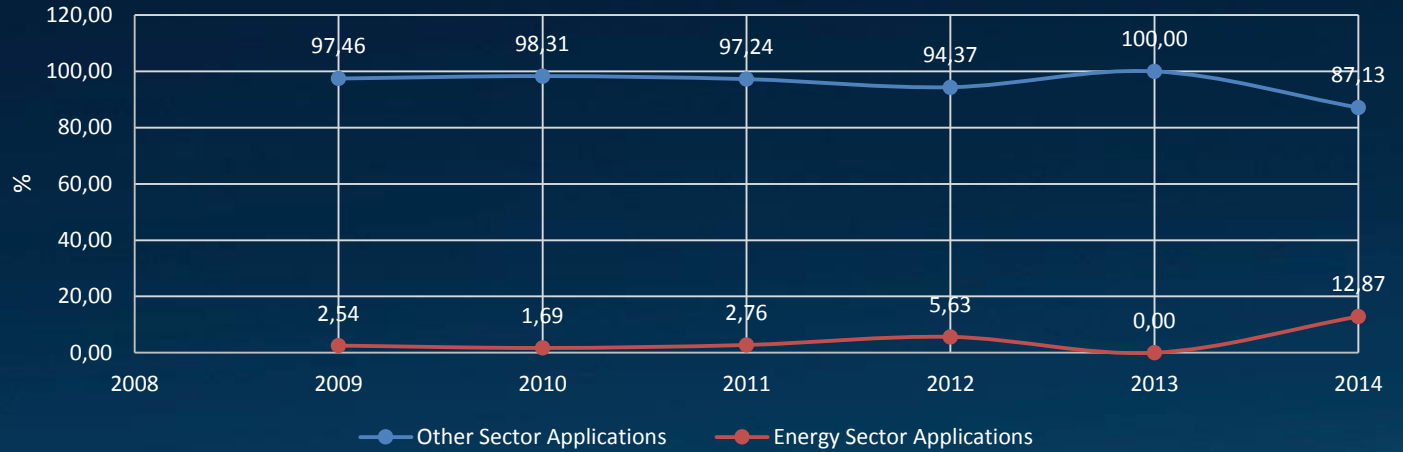
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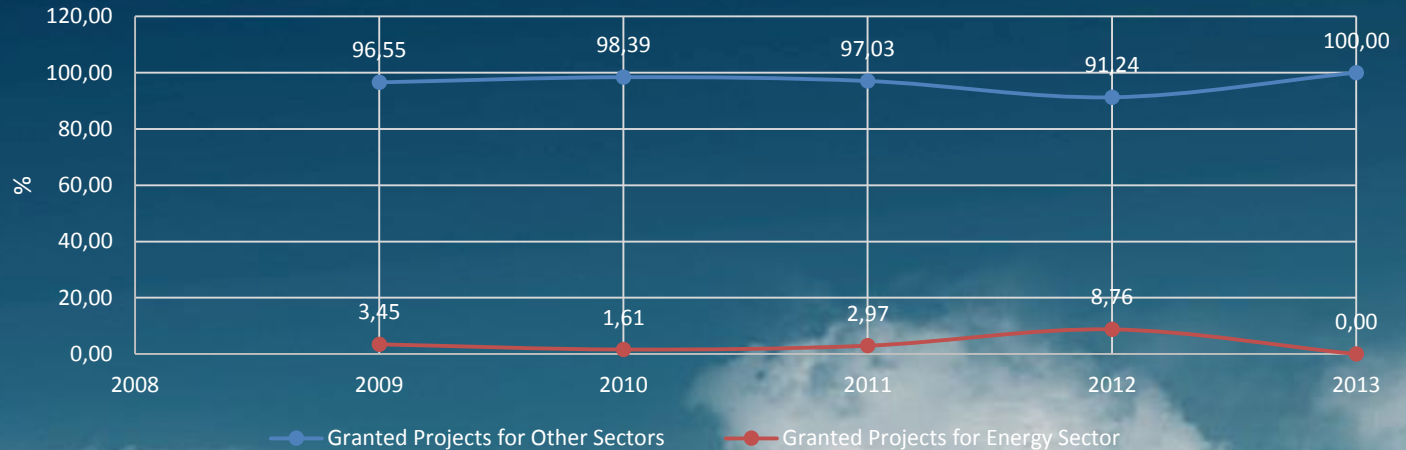
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What MEVKA made

Energy Sector Ratio for Applications to MEVKA Grants



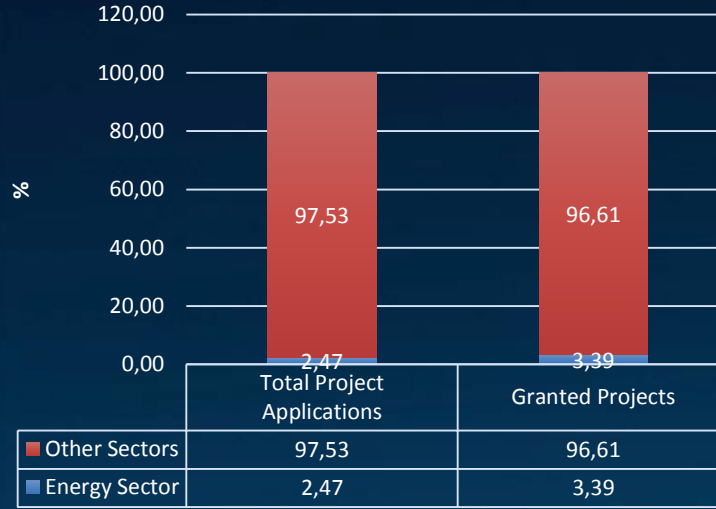
The Ratio of Energy Sector for Granted Project Numbers



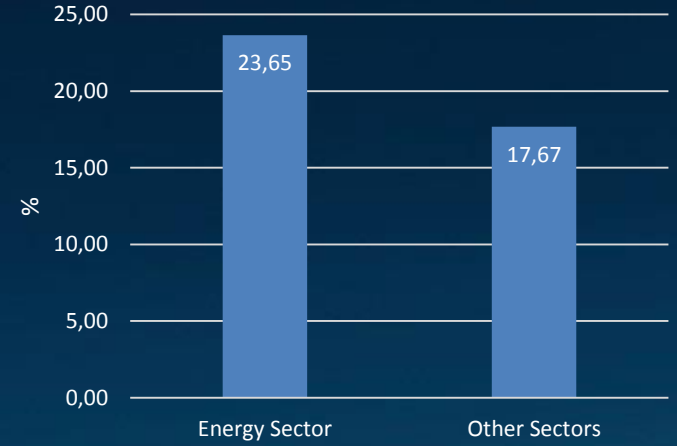


What MEVKA made

The Ratio of Energy Sector Projects



Requested/Granted Ratios by Sectors



	TOTAL
Total Project Application Number	2.594
Energy Sector Project Application Number	64
Granted Project Number	738
Granted Energy Sector Project Number	25
Requested Amount for Total Applications (TL)	391.586.971,93 TL
Requested Amount for Energy Applications (TL)	16.796.189,37 TL
Total Granted Amount	70.209.512,55 TL
Granted Amount for Energy Sector	3.972.598,31 TL



What MEVKA planning to do?

Investment Consultancy Support

Feasibility Studies

- PV Panel Production Feasibility Studies
- Nuclear Industry Feasibility Studies

Sectoral Database

- To make data up to date
- Coordination with sectoral institutions (TEİAŞ, MEDAŞ)



What MEVKA planning to do?

Energy efficiency

Call for Proposals

- In our call for proposal we will prioritize increasing Energy Efficiency in enterprises
- In social projects projects on increasing awareness for energy efficiency will be prioritized.



What MEVKA planning to do?

Renewable and Nuclear Energy

Call for Proposals

- Using Renewable Energy Sources,
- Production and exportation of renewable and nuclear energy technologies on R&D basis



Who we are?

FOREIGN TRADE STATISTICS

Export

2001 **100 million \$**

2011 **1.2billion \$**

2012 **1.3 billion \$**

- **Our 2015 export target** **2.5 billion \$**
- **2023 export target** **15 billion \$**

Wide Range of Export Network
(Exports to more than 150 countries).
There are 1.313 exporter firms in Konya and
it comes 5th in Turkey with these firms.



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Who we are?

TOP 10 COUNTRIES in EXPORT and IMPORTS-2012

Ranking	Country	Export (Dollar)
1	Iraq	241.199.930
2	Germany	73.241.741
3	Iran	51.273.108
4	Russia	47.441.890
5	Italy	46.342.918
6	Bulgaria	45.744.610
7	Saudi Arabia	43.920.396
8	Libya	39.842.933
9	Egypt	38.664.870
10	USA	37.596.854

Export: 1.275.966.061 Dollar

Rankin g	Country	Import (Dollar)
1	Russia	168.563.917
2	China	137.505.393
3	Germany	106.005.001
4	Italy	70.211.535
5	Kazakistan	49.399.890
6	Saudi Arabia	48.620.464
7	Taiwan	43.695.018
8	Holland	39.710.602
9	India	33.628.846
10	South Korea	27.509.037

Import: 1.153.774.351 Dollar



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Who we are?

TOP SECTORS in EXPORT and IMPORT (ISIC Ssytem)-2012

Ranking	Sectors	Export (Dollar)
1	Manufacturing	1.186.897.895
2	Agriculture and Forestry	76.297.395
3	Mining and Quarries	8.993.388

Export: 1.275.966.061 Dollar

Ranking	Sectors	Import (Dollar)
1	Manufacturing	924.053.817
2	Agriculture and Forestry	214.483.849
3	Wholesale and Retail Trade	9.193.977

Import: 1.153.774.351 Dollar

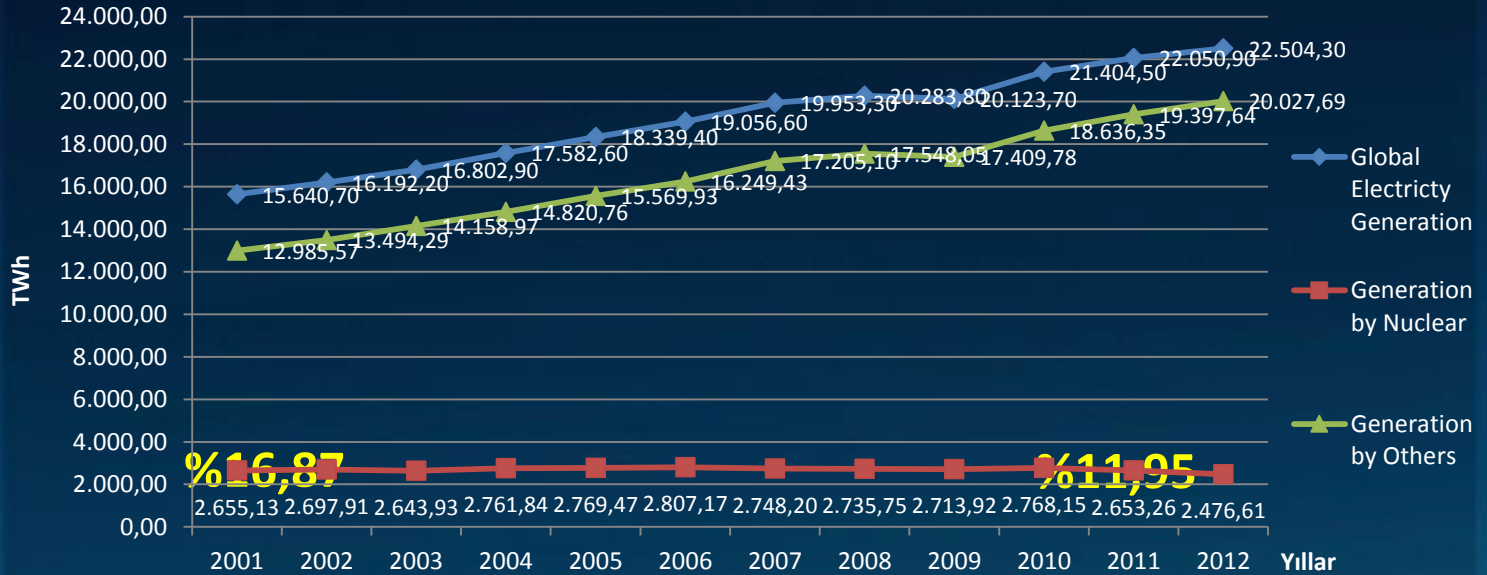


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Global Nuclear Energy

Global Electricity Generation by Years



- The rate of change of electricity production between 2011-2012 is **2.06%**,
- Annual average rate of increase in electricity production for 11 years is **3.51%** .
- There is a **6,66%** decline for electricity production by nuclear sources between 2011-2012,
- The change rate of the electricity production by nuclear sources for 11 years is **0,02%**

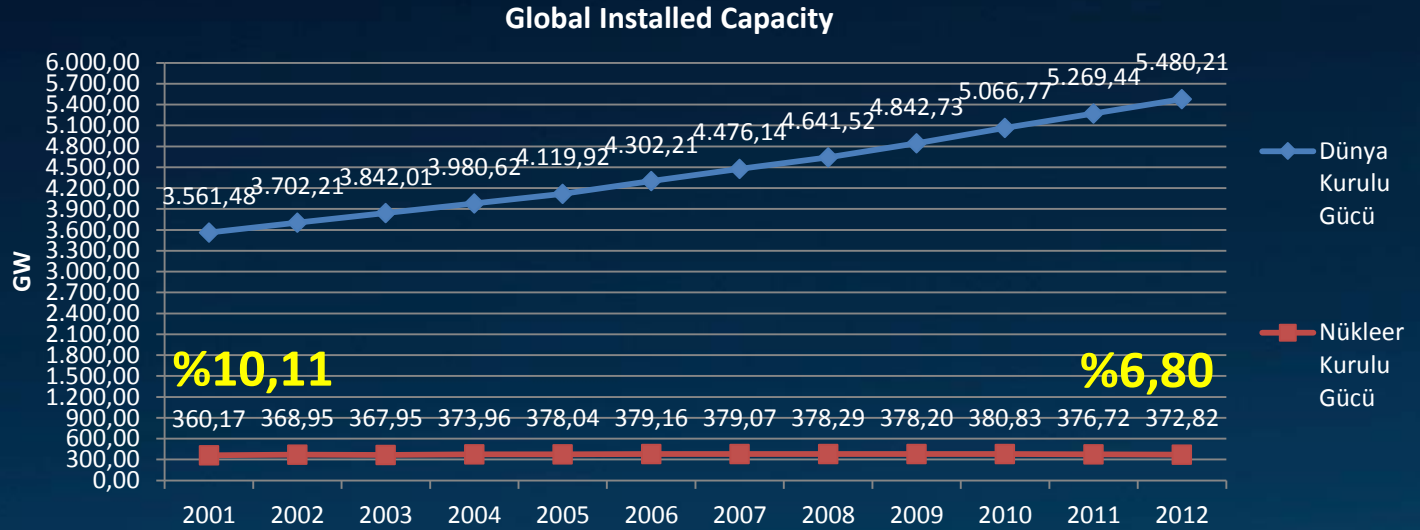


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Global Nuclear Energy



- Global Installed capacity has increased by **4%** between 2011-2012,
- For 12 years the global installed capacity has increased by **53,87%**.
- Nuclear installed capacity has decreased by **1,9%** between 2011-2012,
- For 12 years the nuclear installed capacity has increased by **3,46%**.



Global Nuclear Energy

Nuclear Status by Country

COUNTRY	Operating		Shut-down		Construction		Total	
	Reactor Number	Installed Capacity (MW)	Reactor Number	Installed Capacity (MW)	Reactor Number	Installed Capacity (MW)	Reactor Number	Installed Capacity (MW)
USA	100	99.081	29	10.624	3	3.399	135	114.703
FRANCE	58	63.130	12	3.789	1	1.600	71	68.519
JAPAN	48	42.388	9	4.337	2	2.650	61	51.202
CHINA	21	17.056			28	27.844	49	41.704
RUSSIA	33	23.643	5	786	11	9.297	49	33.726
GERMANY	9	12.068	27	14.301			36	26.369
SOUTH KOREA	23	20.721			4	4.980	27	25.719
UKRAINE	15	13.107	4	3.515	2	1.900	21	18.522
CANADA	19	13.500	6	2.143			25	15.643
ENGLAND	16	9.231	29	4.225			45	13.456
TOTAL (35 Country)	435	372.812	149	56.927	72	68.374	656	498.113

- From 1954 to 2013 a total of **582** reactors have been built, these reactors **142** of them permanent, **2** of them are temporarily closed.
- For 59 years, the annual ratio of reactor construction is **9,84**



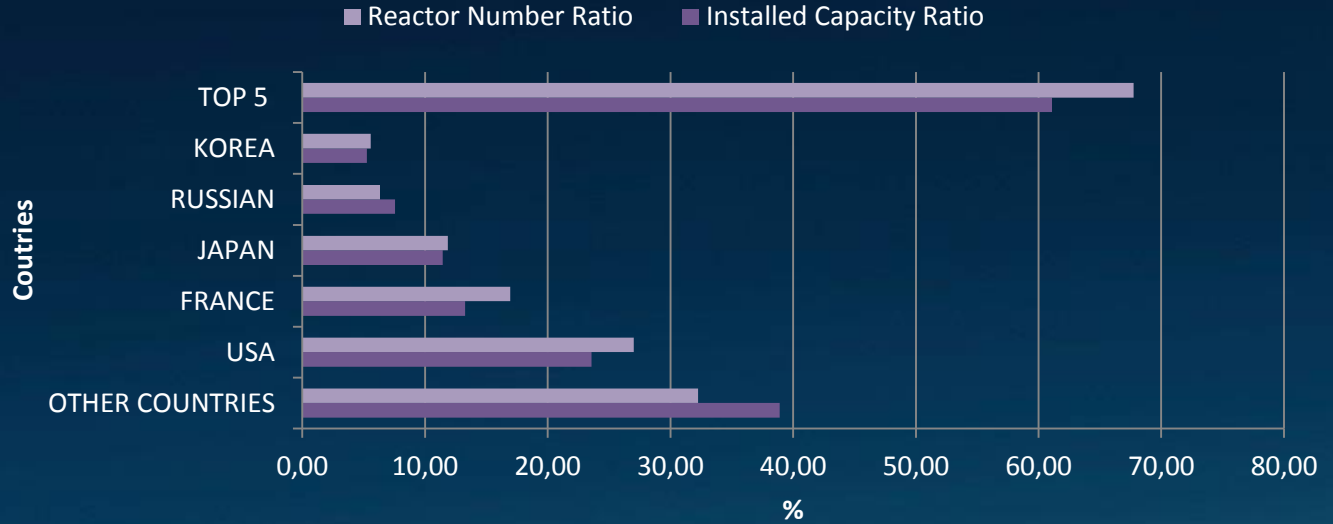
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Global Nuclear Energy

Top 5 Country



- The installed capacity ratio of top 5 countries is **%67,74**,
- The reactor number ratio of top 5 countries is **%61,10**.



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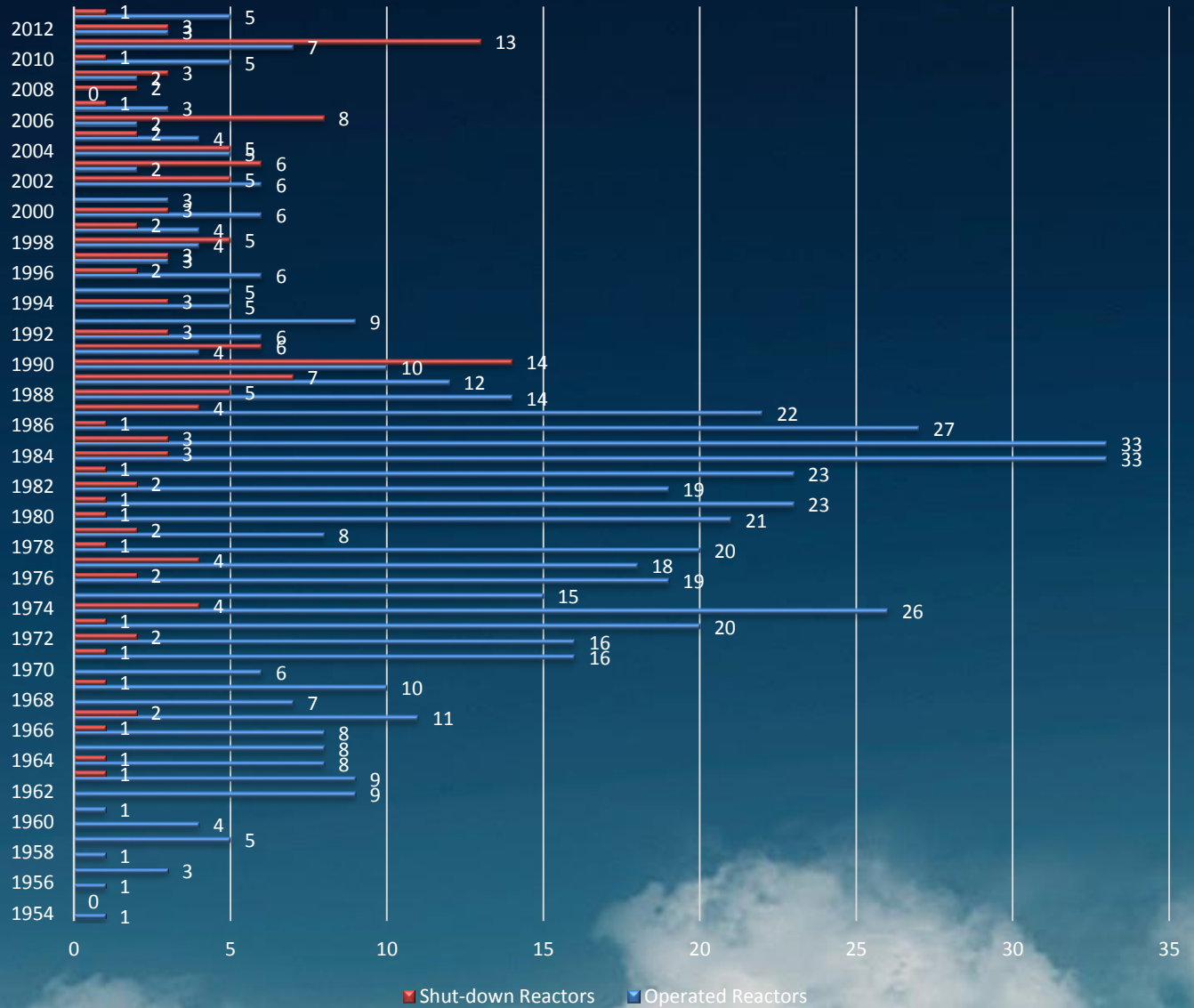
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Global Nuclear Energy

Reactors by Years



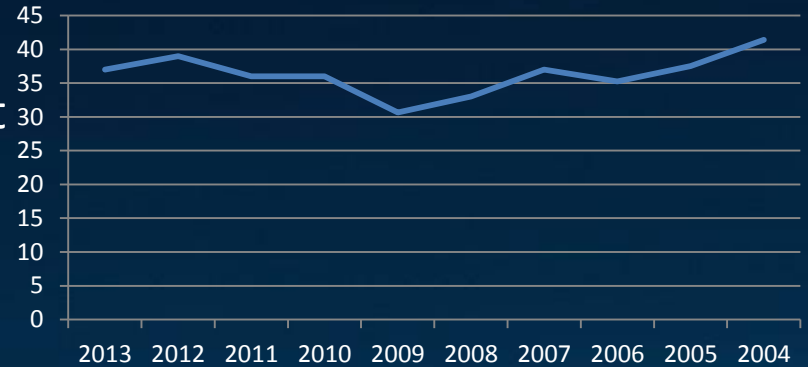
■ Shut-down Reactors ■ Operated Reactors



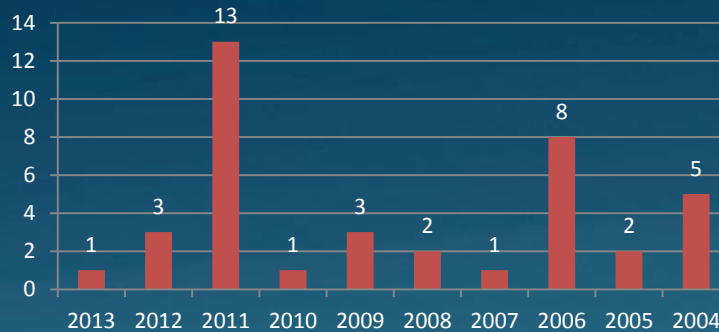
Global Nuclear Energy

- The average operation duration of the shut down reactors in the last decade is **36**.
- The average operation time of shut down reactors is **25**.

Average ages of shutdown reactors



Shutdown Reactors by Years



- The **8** reactors which shut down in 2011 were the Germany's **35** yearsold reactors.
- The **39** reactors which shut down since 10 years are **%27** of total shut down reactors.



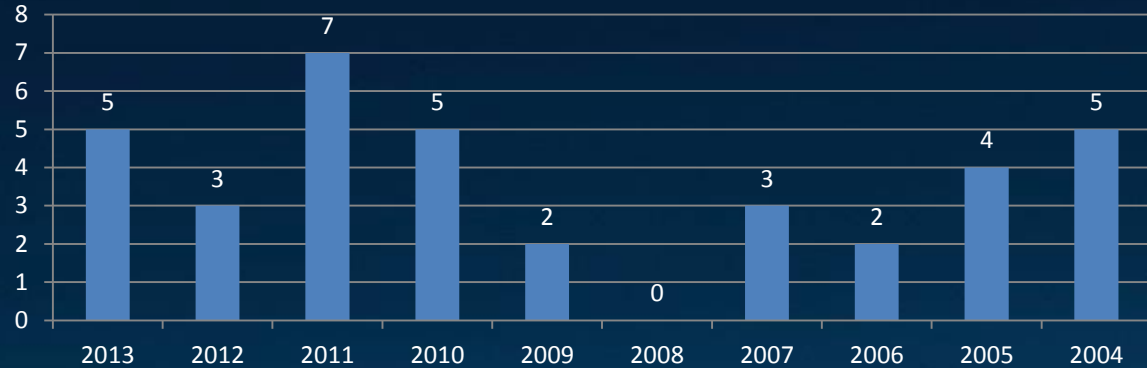


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Started to Operate Reactors by years

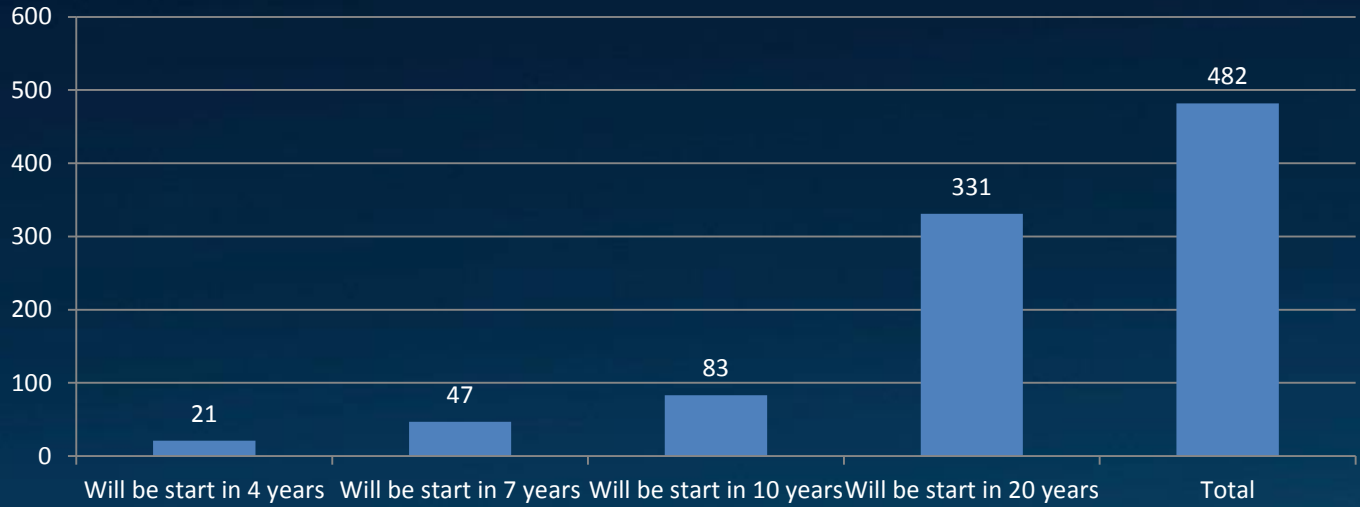


- The **38** reactors which shut down in the last decade was a installed capacity of **23,476 MW**.
- In the last decade **36** reactor started into operation with **69,067 MW** installed capacity.
- The connected installed capacity is 2,94 more times from shut down installed capacity
- In 2011, 13 reactors were closed while seven reactors were connected.



Global Nuclear Energy

The reactors will be operated



- From 2013 until 2033 a total of 482 reactors are planned to be built. 68 of these reactors are under construction, 83 of them are contract agreement phase, the remaining 331 are located in the national program.
- In case of all of the reactors start to operate as planned the ratio of annual reactor construction will be **13,45**.



Global Nuclear Energy

- In the period from 2013 until 2023, the number of 35 years old reactor will be **114** and total capacity **77.796 MW**.
- In contrast, the number of reactor which planned to operate will be **151**, and installed capacity **167.935 MW**.
- The installed capacity of reactor which planning to operate is **2,15** more times from planning to shut down.



Global Nuclear Energy

- For the past 10 years the rate of increase in installed capacity was **1.26%**, while the rate of increase in installed capacity for the next 10 years will be about **24.61%**.
- In the period up to the present, while **9.84** average annual number of construction at the end of the next 20 years this ratio will be about **13.45**.
- For next 10 years the number of new operating reactor will **2,15** more times from shut down reactor while for the past 10 years the connected installed capacity was **2,94** more times from shut down installed capacity



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Global Nuclear Energy

The total initial investment costs for different types of nuclear power plants

COSTS	CANDU 6	PWR	ALWR	VVER	BWR
Investment Land	0,62%	1,80%	0,20%	0,30%	0,10%
Reactor Equipment	26,79%	30,44%	18,60%	21,90%	27,60%
Turbine Equipment	11,41%	19,30%	16,50%	7,20%	14,70%
Electricity Equipment	15,23%	8,00%	5,10%	20,00%	13,20%
Reversing Heat Equipment	3,76%	5,09%	3,80%	2,00%	2,20%
Auxiliary equipment	6,92%	3,17%	3,30%	6,30%	15,20%
Mounting	13,17%	13,80%	13,40%	19,40%	10,10%
Total Direct Cost	77,90%	81,60%	60,90%	77,10%	83,10%
Design and Engineering	4,59%	12,20%	3,50%	6,70%	3,70%
Project Management	3,46%	0,50%	5,80%	4,00%	5,90%
Start-up	4,85%	1,10%	18,40%	0,90%	1,70%
Total indirect costs	12,90%	13,80%	27,70%	11,60%	11,30%
Education	0,85%	0,43%	0,64%	0,29%	0,68%
Taxes and Insurance	0,61%	0,30%	0,45%	0,48%	0,38%
Transport	0,12%	0,06%	0,09%	0,09%	0,08%
Founder Costs	4,14%	2,07%	2,15%	9,88%	1,22%
Spare part cost	1,34%	0,67%	2,15%	0,28%	1,90%
Unexpected Expenses	2,14%	1,07%	5,92%	0,28%	1,34%
Total Other Costs	9,20%	4,60%	11,40%	11,30%	5,60%
Total Costs	100%	100%	100%	100%	100%



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Industry Competation Analysis

Distribution of the main industry in our region, 2009

Criteria	Number of Workplaces		Employment		Endorsement		Salary+Charge		Investments	
	TR	TR52	TR	TR52	TR	TR52	TR	TR52	TR	TR52
Main Sectors										
Agriculture, Forestry, Fishing	0,01	0,09	0,02	0,03	0,01	0,12	0,02	0,04	0,03	0,00
Mining	0,14	0,14	1,09	0,99	0,82	0,57	2,06	1,15	1,83	1,53
Manufacturing	13,08	14,26	27,11	29,15	27,34	27,71	34,93	38,85	35,14	43,32
Electricity, Gas, Steam	0,03	0,01	0,65	0,33	4,63	2,56	2,20	2,28	5,20	2,30
Water, Sewer	0,12	0,30	0,72	1,26	0,46	0,59	1,48	3,33	1,46	5,23
Construction	4,49	2,81	7,16	4,40	6,03	2,74	5,62	4,23	5,46	5,28
Trade And Repair	42,87	49,25	29,23	38,14	46,13	56,29	19,89	25,83	15,86	20,55
Transport, Storage And Communication	15,86	15,39	9,71	8,80	5,84	5,94	9,10	7,20	15,38	15,30
Hotels, Restaurants, Etc.	8,17	5,89	6,53	3,75	1,64	0,70	4,11	1,98	2,82	0,55
Information And Communication	1,06	1,15	1,51	0,90	2,14	0,43	4,41	2,70	11,68	0,93
Real Estate, Renting And Business Activities	0,78	0,43	0,41	0,19	0,20	0,22	0,31	0,08	0,34	0,00
Professional, Scientific, Technical Operations	5,04	3,63	3,72	2,55	1,98	0,53	3,87	1,66	1,35	0,65
Administrative And Support Services	0,97	0,50	5,90	3,67	1,40	0,60	5,83	5,00	1,11	0,32
Education	0,44	0,47	1,77	2,04	0,37	0,26	2,53	2,49	0,90	1,12
Health And Social Services	1,27	0,61	1,99	1,59	0,65	0,52	2,79	2,91	1,19	2,78
Culture, Arts, Sports, Entertainment	0,57	0,27	0,36	0,12	0,16	0,01	0,36	0,02	0,15	0,01
Other Services	5,11	4,79	2,11	2,10	0,19	0,20	0,48	0,24	0,10	0,06
Other / Unallocated	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,06
Total	100,00	100,00	100,00	100,00	100,00	100,00	100,00	100,00	100,00	100,00

Industry Competation Analysis

Distribution of Manufacturing Industry in our region,2009

Criteria	Number of Workplaces		Employment		Endorsement		Salary+Charge		Investments	
Sectors	TR	TR52	TR	TR52	TR	TR52	TR	TR52	TR	TR52
10-Food	12,96	11,27	13,03	30,26	15,10	53,94	12,60	44,26	10,36	30,20
11-Drink	0,18	0,06	0,46	0,30	1,08	0,41	0,80	0,88	1,11	0,00
13-Textile	5,82	4,65	10,98	1,65	7,68	0,99	8,48	0,81	6,38	1,47
14-Wearing Apparel	16,05	7,64	14,70	5,30	6,64	1,75	8,93	3,55	3,45	0,94
15-Leather And Products	2,33	5,41	1,69	2,24	0,85	0,69	0,95	0,83	0,46	0,12
16-Wood, Wood Products	8,14	6,93	2,63	2,57	1,41	0,56	1,08	1,17	1,21	0,82
17-Paper And Paper Products	0,72	0,33	1,55	1,31	2,00	2,19	1,94	1,55	1,75	1,83
18-Printed Publication	3,97	1,87	2,08	0,93	1,09	0,29	1,49	0,49	0,66	0,35
20-Chemical Products	1,19	1,12	2,21	1,66	5,37	1,97	4,16	1,60	3,62	0,00
21-Basic Pharmaceutical	0,12	0,10	1,14	0,49	2,03	0,40	4,09	2,19	0,99	0,36
22-Rubber & Plastic	5,81	11,11	5,61	7,91	5,01	6,07	5,34	5,48	4,99	19,29
23-Mineral Products	4,14	4,23	6,07	3,86	5,67	4,60	6,56	4,18	8,14	5,51
24-Base Metal	0,76	1,78	3,67	5,18	10,07	5,84	6,40	5,94	31,12	8,67
25-Metal Furniture	14,86	18,64	8,79	9,05	5,14	4,25	6,53	5,20	4,24	5,41
27-Electrical Equipment	2,31	0,77	3,96	0,73	5,99	0,56	6,01	0,52	3,27	0,82
28-Machinery And Equipment	3,98	5,84	5,15	10,14	3,63	7,73	4,96	10,03	3,84	10,95
29-Manufacture Of Motor Vehicles, Etc.	1,41	7,10	4,84	11,10	8,37	5,96	7,95	8,57	5,42	10,37
30-Other Transport Equipment	0,35	0,05	1,42	0,04	1,39	0,02	2,37	0,02	1,84	0,00
31-Furniture	10,53	8,36	5,16	3,96	1,99	1,23	2,61	2,02	1,09	1,53
32-Other Manufacturing	2,41	1,22	1,79	0,97	2,11	0,38	1,24	0,59	0,60	0,00
33-Installation, Repair	1,71	1,49	1,28	0,28	0,54	0,04	1,43	0,05	0,63	0,00
Other / Unallocated	0,27	0,04	1,80	0,08	6,85	0,11	4,07	0,06	4,83	1,33
Manufacturing Industry	100,00	100,00	100,00	100,00	100,00	100,00	100,00	100,00	100,00	100,00



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Industry Competation Analysis

Sectoral Distribution of Investments

Period	2003		2009	
	TR	TR52	TR	TR52
Main Sectors / Regions				
Mining	0,8	0,3	1,5	0,6
Manufacturing	41,7	65,5	35,7	47,9
Electricity	13,6	4,7	8,3	12,8
Construction	3,3	1,3	7,2	3,7
Trade And Repair	10,8	14,7	16,0	18,6
Hotels, Restaurants, Etc.	4,3	1,9	3,2	0,6
Transport, Storage And Communication	15,4	5,6	21,2	9,4
Real Estate, Renting And Business Activities	4,0	1,1	3,6	3,7
Education	3,0	0,5	1,0	0,6
Other / Unallocated	3,1	4,3	2,2	2,0
Total	100,0	100,0	100,0	100,0



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Industry Competation Analysis

TR52 Relative Shares Index,2009 – (For Turkey 100)

NACE Sectors	Number of Workplace	Employment	Endorsement	Salary+Charge	Investments
10-Food	87	232,3	357,2	351,3	291,6
11-Drink	31,2	65,9	37,7	108,9	0
13-Textile	80	15	13	9,6	23,1
14-Wearing Apparel	47,6	36,1	26,4	39,7	27,4
15-Leather and Products	232,2	132,2	81,7	87,3	25,8
16-Wood, wood products	85	97,4	39,9	108,3	68,3
17-Paper and Paper Products	46	84,1	109,3	79,7	104,6
18-Printed Publication	47,1	44,9	26,8	33	53,2
20-Chemical Products	94	75	36,7	38,4	0
21-Basic Pharmaceutical	87,2	42,7	19,6	53,7	36,2
22-Rubber & Plastic	191,3	140,8	121,2	102,8	386,8
23-Mineral Products	102,1	63,6	81,2	63,7	67,7
24-Base Metal	234,8	141,3	58	92,8	27,9
25-Metal Furniture	125,5	103	82,9	79,6	127,7
27-Electrical Equipment	33,3	18,4	9,4	8,7	25,1
28-Machinery and Equipment	146,9	196,9	213,2	202,1	285,4
29-Manufacture of motor vehicles, etc.	503,8	229,2	71,2	107,7	191,3
30-Other Transport Equipment	13,3	2,7	1,4	1	0,2
31-Furniture	79,4	76,7	61,7	77,4	140,5
32-Other Manufacturing	50,7	54,1	17,8	48	0
33-Installation, Repair	87	22,3	6,8	3,1	0,7



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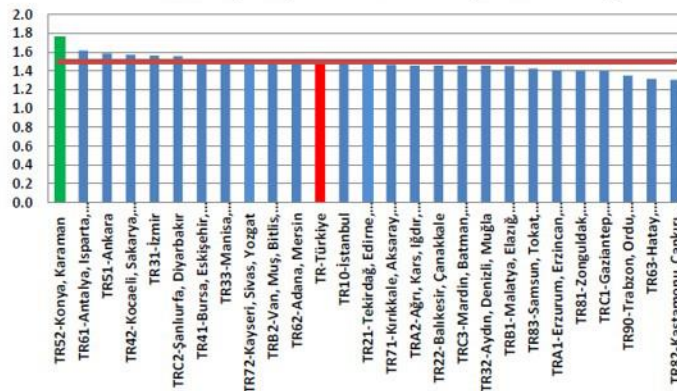


Industry Competation Analysis

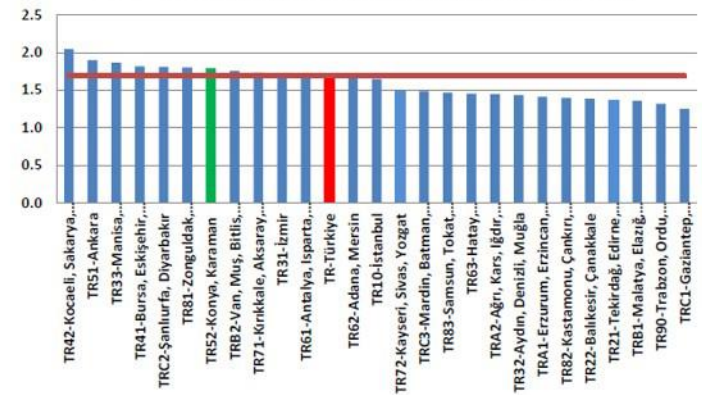
Levels and Distribution of Technology in Manufacturing Industry (%)

Turkey	Number of Workplace	Employment	Endorsement	Salary&Charge	Investments
Low Technology Sectors	62,46	54,12	41,88	37,32	27,99
Low-Middle Technology Sectors	25,03	23,44	24,79	34,24	40,76
Middle-High Technology Sectors	12,38	21,71	31,91	26,97	30,49
High Technology Sectors	0,12	0,7	1,4	1,32	0,72
TR52	Number of Workplace	Employment	Endorsement	Salary&Charge	Investments
Low Technology Sectors	44,7	47,2	55,9	57,2	43,3
Low-Middle Technology Sectors	34,8	26,8	20,5	22,7	39,9
Middle-High Technology Sectors	20,5	25,7	23,3	19,5	16,6
High Technology Sectors	0	0	0	0	0

Score of the region by the number of workplace technology



Score of the region by the number of employment technology





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5 REASON
TO INVEST
IN KONYA - KARAMAN



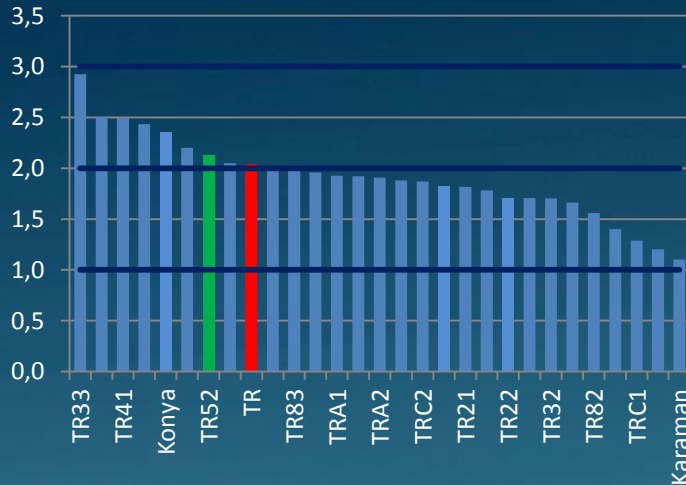
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Development Agency

Industry Competation Analysis

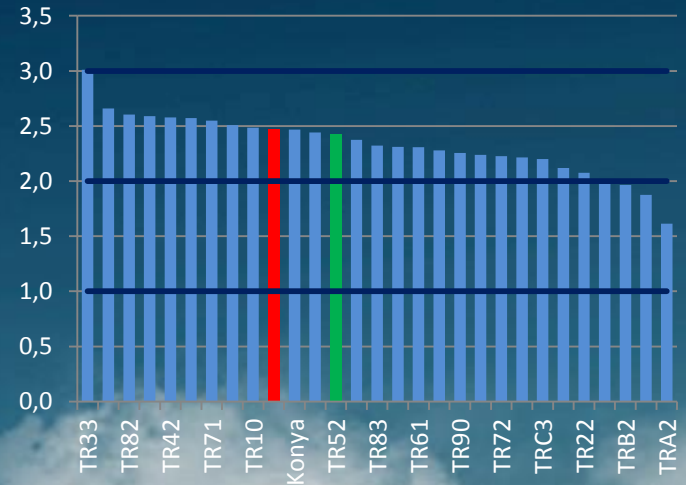
TR52 Region Foreign Trade Breakdown by Sectors, 2012

Thousand USD	Export	Export Share (%)	Import	Import Share (%)	X-M
Agriculture (Agriculture, Livestock, Fisheries and Forestry)	91.646,00	5,90	230.841,00	18,10	-139,20
Mining, Quarrying	9.024,00	0,60	2.858,00	0,20	6,17
Manufacturing Industry	1.450.168,00	93,30	995.804,00	78,00	454,36
Other (Junk, Entertainment, Sports activities)	3.777,00	0,20	47.600,00	3,70	-43,82
TR52 Konya-Karaman	1.554.615	100	1.277.103	100	277.512

Technology Scores of Exports by Regions, 2012



Technology Scores of Imports by Regions, 2012





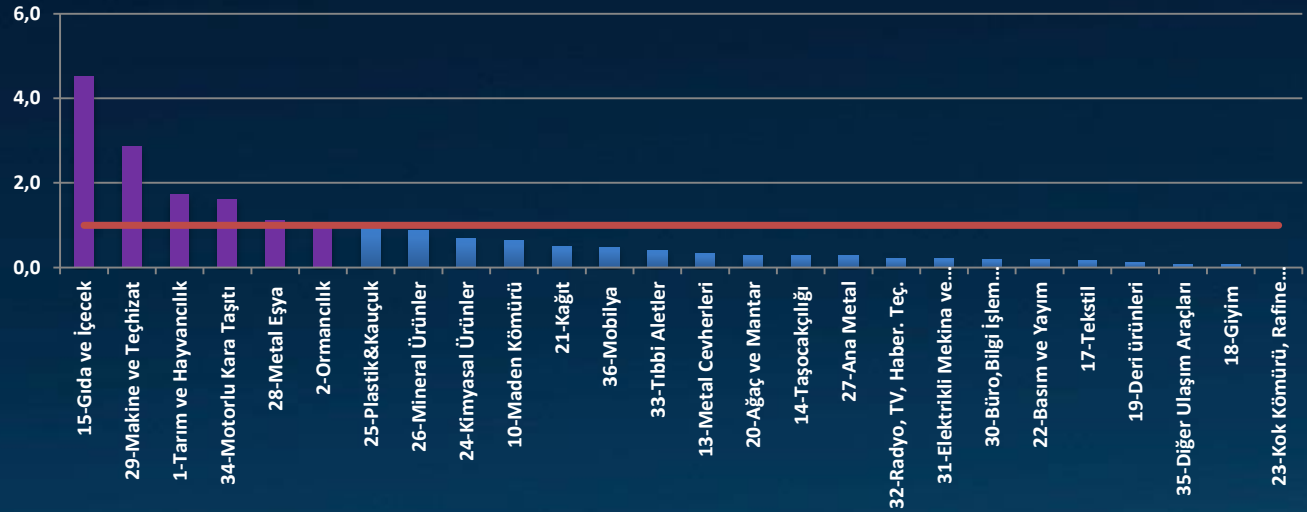
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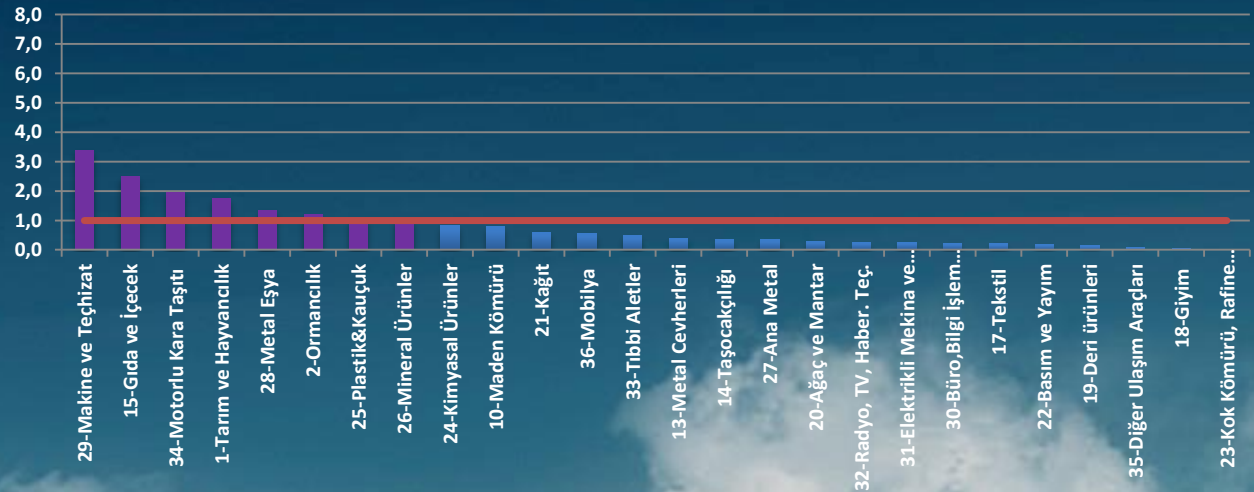
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Industry Competetation Analysis

Specialization of Exports for TR52, 2012



Specialization of Imports for Konya, 2012





Recommendations

- Nuclear Industry Market Research
 - Component Name
 - Component GTIP Code
 - Component NACE Code
 - The Amount of use on one Reactor
 - The Russian Standarts
 - The France-Japan Standarts





Recommendations

- Temporary Solution
 - Arranging a workshop with Nuclear Acedemicians, Development Agencies Specialists and TSA Specialists
- Permanent Solution
 - Establish an National Energy Agency





Contact

Specialist of Energy

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