



# The 30<sup>th</sup> JCCP 2012 International Symposium Panel Discussion January 26<sup>th</sup>, 2012 presented by

**ABDULGHAFOOR M. ABDULJABBAR**

**North Refineries Company's Director General**

**Iraqi Ministry of Oil**



# Challenge of Iraq to Construct World Class Refining Industry



# Contents

- Major refineries in Iraq.
- Future major refineries in Iraq.
- Iraq's oil fields and wells.
- Vast increasing of crude oil & associated gas production in the near future.
- North refineries company's production from 2003 to 2011.
- Fuel consumption.
- Contracts.
- Conclusions.



# Major Refineries in Iraq

## 1- North Refineries Company (NRC)

A. 310,000 BPSD Baiji Refining Capacity.

B. External Refineries:

1. 30,000 BPSD Kirkuk Refining Capacity.

2. 30,000 BPSD Siynia Refining Capacity.

Two units in operation and one unit under construction.

3. 20,000 BPSD Kisik Refining Capacity.

One unit in operation and second under construction.

4. 20,000 BPSD Qaiyarah Refining Capacity.

Needs to extend Crude Pipe line from the Strategic Line about 60

Km.

5. 16,000 BPSD Hadithah Refining Capacity.

6. 20,000 BPSD P28 Aljazirah Refining Capacity.

Planned to be re-engineering and reinstalling inside NRC.

C. Future Projects;

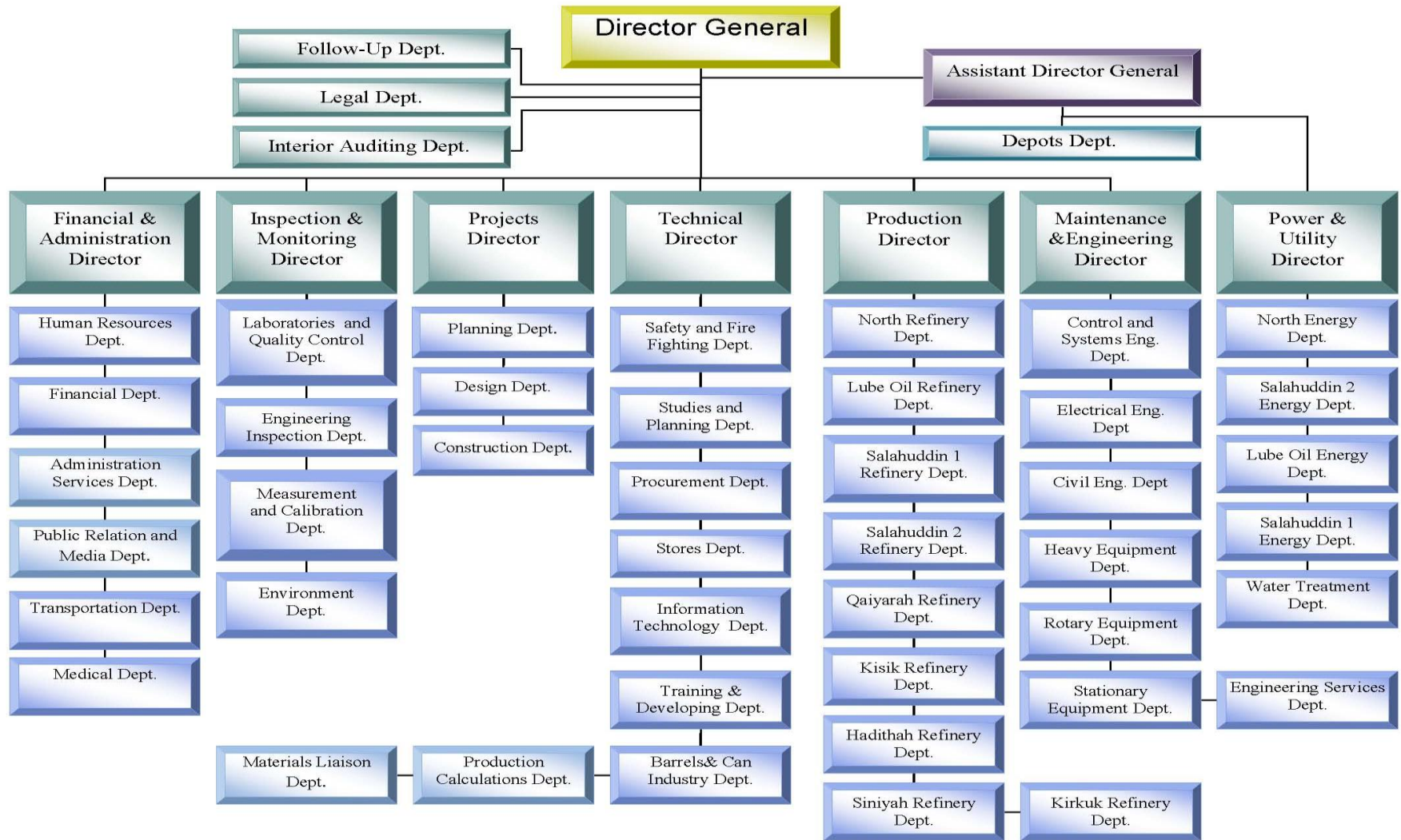
i. New Kirkuk Refinery with capacity of 150,000 BPSD.

ii. New FCC unit with capacity of 55,000 BPSD.





# North Refineries Company's Organization Structure





## 2- Midland Refineries Company (MRC)

A. 212,000 BPSD Doura Refining Capacity.

B. External Refineries:

1. 30,000 BPSD Najaf Refining Capacity.

2. 30,000 BPSD Semawah Refining Capacity.

3. 20,000 BPSD Dywaniyah Refining Capacity, one unit in operation and second under construction.

C. Future Projects: 200,000 BPSD Karbala Refinery.



## 3- Southern Refineries Company (SRC)

- A. 210,000 BPSD Basrah Refining Capacity.
- B. External Refineries:
  - 1. 30,000 BPSD Nasiriya Refining Capacity.
  - 2. 30,000 BPSD Maissan Refining Capacity.
- C. Future Projects:
  - i. Nasiriya Refinery with capacity of 300,000 BPSD.
  - ii. Maissan New Refinery with capacity of 150,000 BPSD.



# 1- North Refineries Company (NRC) /Baiji Refinery

NRC has a number of projects which will contribute to the development of the North Refineries Company as follow:-

- North Refinery in respect of implementing FCC (Fluid Catalytic Cracking) unit 55,000 BPSD of capacity for conversion fuel oil to light products especially of fuel oil up to 30% of the total production volume. Feasibility Study has been done by JICA. FEED and Licensor Selection will be done by JICA too.
- New Isomerization Unit / 20,000 BPSD, in operation since July, 2011.
- Six new boilers- 400 Ton/Hr Capacity, under Construction.
- New power generation plant/ 85 MW, contracted and site preparation.
- Reconstruction of 54 Storage Tanks. 90% has been done.
- New LPG Unit/ 400 Ton/day. Contracted.
- Upgrading of Waste Water Treatment System.
- New R.O. unit in Operation since 1/1/2010.
- Upgrading Existing Hydrogen production with KTI company.
- New Can production line. Contracted with a Germany Company.
- Sulphur-Pelletisation unit. Received at site and under installing.
- Upgrading North Refinery's Control System by Honeywell with DCS system.
- De-bottlenecking and Improving the performance of North Refinery, SAL. 1 Refinery , SAL. 2 Refinery, under discussion.





## 2- Midland Refineries Company (MRC) / Doura Refinery

Doura Refinery has a number of projects which will contribute to the development of Doura Refinery as follow:-

- Steam Boiler/ 150 Ton Capacity, in the process of Installation.
- Isomerization Unit/ 10,000 BPSD, in the process of installation.
- CCR + HDT project, design and equipment supply.
- Gas Generators, one unit ready the other in the process of installation.
- R.O. project, in the process of operation.
- Gas Oil Hydrotreater project, announced as a tender for EPC.
- N<sub>2</sub> Unit project, reviewing proposals.
- Mobil Boilers project, receiving proposals.
- H<sub>2</sub> Unit project, analyzing proposals.
- RFCC unit with capacity of 30,000 BPSD- FEED package in final stage.



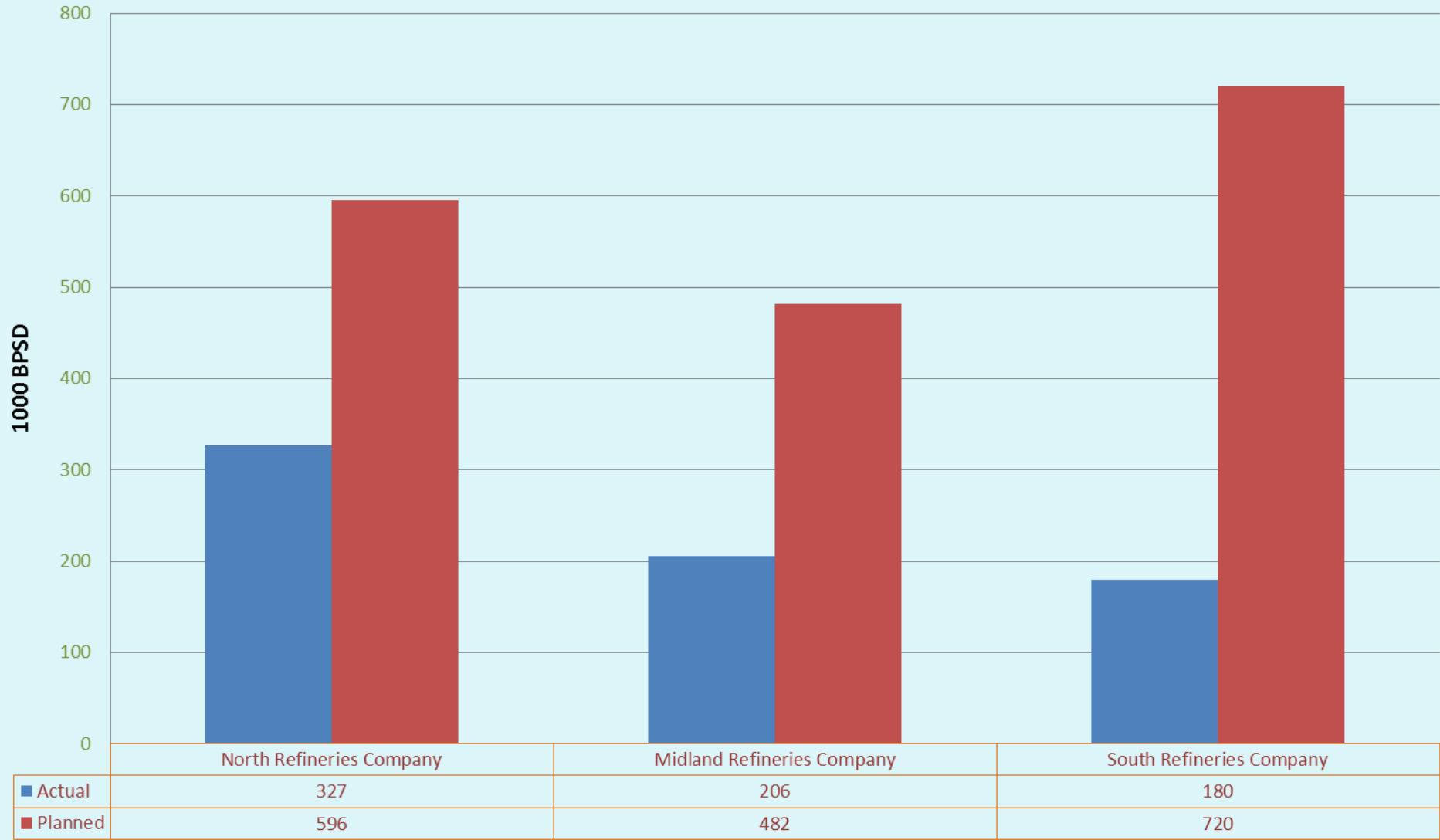
## 3- Southern Refineries Company (SRC) / Basrah Refinery

Basrah Refinery has a number of projects which will contribute to the development of Basrah Refinery as follow:-

- New 70,000 BPSD Distillation unit with LPG unit 300 Ton/Day, under construction.
- Hydrotreater Platformer unit 10,000 BPSD, under construction.
- New FCC unit 30,000 BPSD, FEED package preparation phase.
- New Isomerization unit 11,000 BPSD, under construction.
- 3 New Boilers, 100 Ton/Hr each, under construction.
- New Waste Water Treatment Plant, in Tendering Stage .
- New Cooling Tower, under construction.
- New Gas Oil Hydrotreatment unit, under construction.
- New Utility Package, contracted.
- New Naphtha Hydrotreater unit/ 15,000 BPSD, planned.
- Upgrading of Instrumentation & Control.
- Replacement of Old Reformer Units, planned.
- Study for rehabilitation of the refinery, Started.



# Refining Capacity in IRAQ





# Future Major Refineries in Iraq

1. New Kirkuk Refinery in Kirkuk City ( North of Iraq)  
150,000 BPSD Refining Capacity. In the FEED process.
2. Maissan Refinery in Maissan City ( South of Iraq)  
150,000 BPSD Refining Capacity. In the FEED process.
3. Karbala Refinery in Karbala City ( South of Iraq)  
200,000 BPSD Refining Capacity. Has been awarded to Italian company for investment.
4. Nasiriya Refinery in Nasiriya City ( South of Iraq)  
300,000 BPSD Refining Capacity. In FEED process.



# 1- New Kirkuk Refinery

Process Unit's Licensors for New Kirkuk Refinery Capacity of 150,000 BPSD  
Achieved about 60 % FEED by Shaw Energy and Chemicals Limited/ UK

| No  | Licensor                  | Process Unit                                      |
|-----|---------------------------|---|
| 1-  | SGSI                      | Kerosene Hydrotreating Technology                 |
| 2-  | SGSI                      | Light Gas Oil Hydrodesulphurisation Technology    |
| 3-  | SGSI                      | VGO Hydro-Cracking                                |
| 4-  | HALDOR TOPSOE             | Hydrogen Production Unit                          |
| 5-  | POERNER                   | Blown Asphalt                                     |
| 6-  | UOP                       | Fluid Catalytic Cracking Unit FCC                 |
| 7-  | UOP                       | Naptha Hydrodesulphurisation                      |
| 8-  | UOP                       | NC <sub>4</sub> Isomerisation Unit                |
| 9-  | UOP                       | Continuous Catalytic Reformer CCR                 |
| 10- | UOP                       | C <sub>5</sub> /C <sub>6</sub> Isomerisation Unit |
| 11- | MERICHEM                  | Saturated Gas Plant LPG Treatment                 |
| 12- | MERICHEM                  | Unsaturated Gas Plant LPG Treatment               |
| 13- | DUPONT-STRATCO            | C <sub>3</sub> /C <sub>4</sub> Alkylation         |
| 14- | LURGI                     | Sulfur Recovery and Tail Gas                      |
| 15- | Shaw Energy and Chemicals | Atmospheric Distillation                          |
| 16- | Shaw Energy and Chemicals | Vacuum Distillation                               |





## 2- Maissan Refinery

Process Unit's Licensors for Maissan Refinery Capacity of 150,000 BPSD  
FEED has been done by Shaw Energy and Chemicals Limited/ UK

| No. | Licensor                  | Process Unit                                      |
|-----|---------------------------|---|
| 1-  | Haldor Topsoe             | Kerosene Hydrotreating Technology                 |
| 2-  | Haldor Topsoe             | Gas Oil Hydrodesulphurisation Technology          |
| 3-  | Axens                     | VGO Hydro-Cracking                                |
| 4-  | Haldor Topsoe             | Hydrogen Production Unit                          |
| 5-  | Lurgi                     | Sulphur Recovery                                  |
| 6-  | KBR                       | Fluid Catalytic Cracking Unit FCC                 |
| 7-  | Axens                     | Naptha Hydrodesulphurisation                      |
| 8-  | UOP                       | NC <sub>4</sub> Isomerization Unit                |
| 9-  | Axens                     | Continuous Catalytic Reformer CCR                 |
| 10- | UOP                       | C <sub>5</sub> /C <sub>6</sub> Isomerisation Unit |
| 11- | Axens                     | Saturated Gas Plant LPG Treatment                 |
| 12- | Axens                     | Unsaturated Gas Plant LPG Treatment               |
| 13- | Stratco Dupont            | C <sub>3</sub> /C <sub>4</sub> Alkylation         |
| 14- | Poerner                   | Blown Asphalt                                     |
| 15- | Shaw Energy and Chemicals | Atmospheric Distillation                          |
| 16- | Shaw Energy and Chemicals | Vacuum Distillation                               |
| 17- | KBR                       | Solvent De-Asphalting                             |
| 18- | Axens                     | Deasphalted Oil HDT                               |



## 3- Karbala Refinery

Process Units Licensors for Karbala Refinery Capacity of 200,000 BPSD  
FEED has been done by Technip/ Italy.

| No. | Licensor          | Process Unit                                      |
|-----|-------------------|---|
| 1-  | Axens             | Kerosene Hydrotreating Technology                 |
| 2-  | Axens             | Light Gas Oil Hydrodesulphurisation Technology    |
| 3-  | UOP               | VGO Hydro-Cracking                                |
| 4-  | Haldor Topsoe     | Hydrogen Production Unit                          |
| 5-  | Poerner           | Blown Asphalt                                     |
| 6-  | UOP               | Fluid Catalytic Cracking Unit FCC                 |
| 7-  | UOP               | Naptha Hydrodesulphurisation                      |
| 8-  | Axens             | Polynaphtha Unit                                  |
| 9-  | UOP               | Continuous Catalytic Reformer CCR                 |
| 10- | UOP               | C <sub>5</sub> /C <sub>6</sub> Isomerisation Unit |
| 11- | Tecnimont KT      | Sulfur Recovery and Tail Gas                      |
| 12- | Open Art/ Technip | Atmospheric Distillation                          |
| 13- | Open Art/ Technip | Vacuum Distillation                               |



## 4- Nasiriya Refinery

Process Units Licensors for Nasiriya Refinery Capacity of 300,000 BPSD  
FEED has been done by Foster Weller/ UK

| No. | Licensor      | Process Unit                                      |
|-----|---------------|---|
| 1-  | Axens         | Kerosene Hydrotreating Technology                 |
| 2-  | Axens         | Light Gas Oil Hydrodesulphurisation Technology    |
| 3-  | UOP           | Light Naphtha Isomerization                       |
| 4-  | Technimont    | Hydrogen Production Unit                          |
| 5-  | Dupont        | C <sub>3</sub> ,C <sub>4</sub> Olefins Alkylation |
| 6-  | UOP           | Vacuum Gas Oil Hydro-Desulphurization             |
| 7-  | UOP           | Naphtha Hydrodesulphurisation                     |
| 8-  | Axens         | NC <sub>4</sub> Isomerisation Unit                |
| 9-  | UOP           | Continuous Catalytic Reformer CCR                 |
| 10- | UOP           | Vacuum Gas Oil Fluid Catalytic Cracking           |
| 11- | CLG           | Vacuum Gas Oil Hydrocracking                      |
| 12- | Axens         | Vacuum Residue H. Oil                             |
| 13- | Poerner       | Blown Asphalt Production                          |
| 14- | UOP           | LPG Production                                    |
| 15- | Foster Weleer | Atmospheric Distillation                          |
| 16- | Foster Weller | Vacuum Distillation                               |
| 17- | Foster Weleer | Gas Sweeting                                      |
| 18- | Technimont    | Sulphur Recovery                                  |



# Iraq's Oil Fields and Wells

**Iraq's oil fields now contain 143 billion barrels of crude oil, an increase of 24 % on the previous estimate of 115 billion barrels.**

## **1.Southern Wells:**

I. Wells allocated to the companies through the licensing round in Basrah Province are Rumaila Oil Fields , West Qurna Oil Fields, Zubair Oil Fields, Majnoon Oil Fields, and Maissan Oil Fields with total reserves estimated around 2.5 billion barrels.

II.Planning for drilling 42 Wells in 2012.

## **2.Wells National Effort :**

Oil Fields of Nasiriya, some of the Maissan Oil Fields, Toba Oil Field, Artawi Oil Field, and River Life Oil Fields.

## **3.Central Wells:**

Wells allocated to the companies through licensing rounds in Wasit Province is Badra Oil Field.

## **4. North Wells:**

I.Wells allocated to the companies through licensing rounds in the North of Iraq is Qaiyarah Oil Fields in Mosul.

II.The Qara Dagh Block lies on trend with existing discoveries and is located in the prolific Zagros Fold Belt of Northern Iraq, which contains several large fields including the super-giant Kirkuk field.

III.Planning for drilling 35 Wells in 2012.

## **General Information:**

The normal capacity of 2000 Barrels/Day to 6000 Barrels/ Day. Well depth ranges from 2400 meter to 3200 meter.



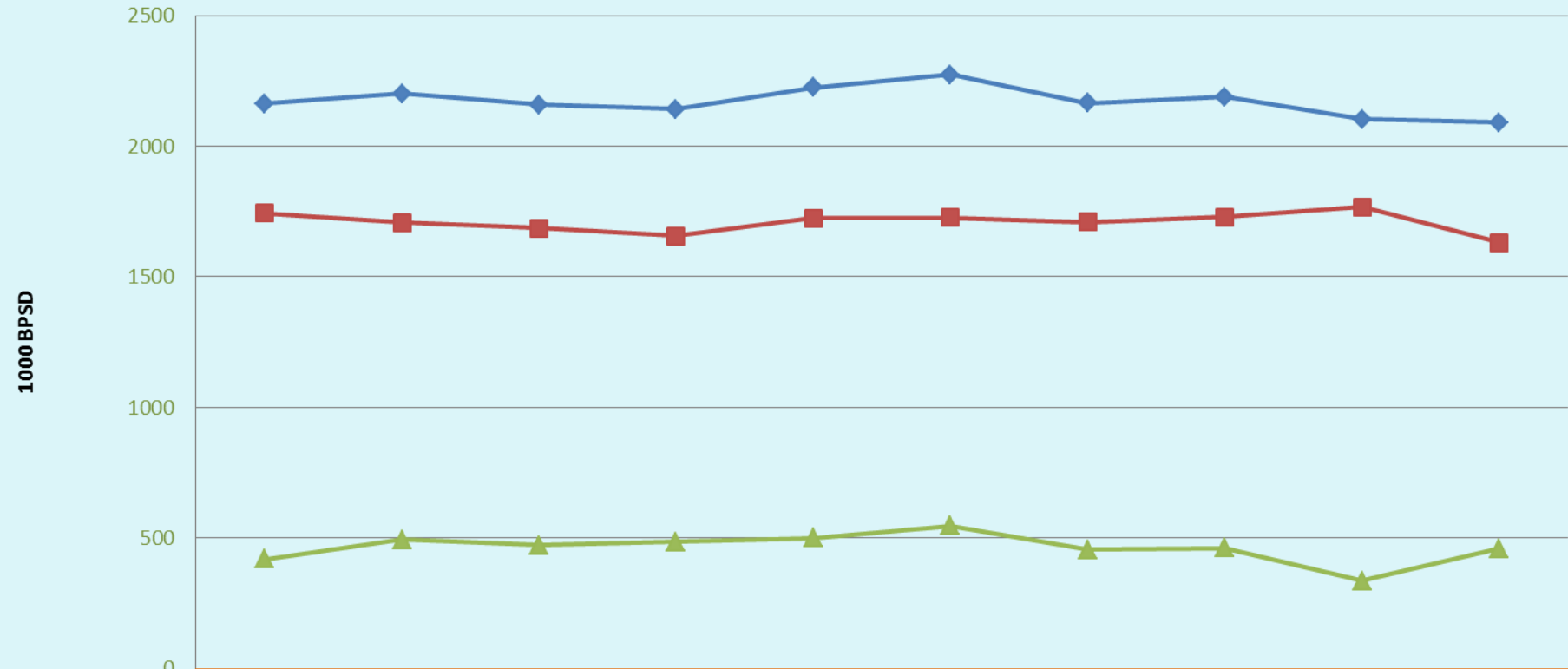
# **Crude Oil Production and Consumption**

- 1- Northern and Midland Regions.**
- 2- Southern Regions.**





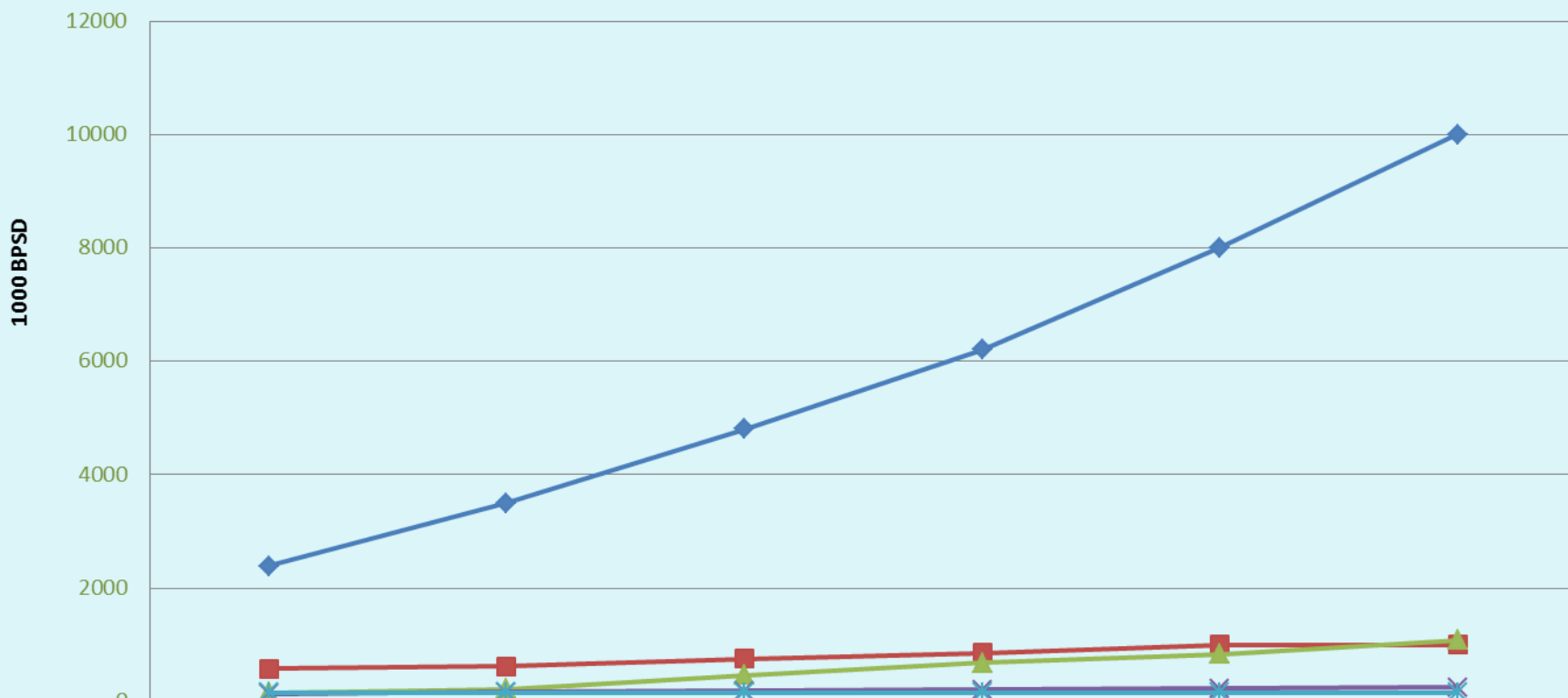
# Daily average of Crude Oil Production for Northern, and Southern Regions from Jan. to Oct. 2011



|                    | Jan. | Feb. | Mar. | Apr. | May  | Jun. | Jul. | Aug. | Sep. | Oct. |
|--------------------|------|------|------|------|------|------|------|------|------|------|
| ◆ Total Export     | 2163 | 2202 | 2159 | 2141 | 2225 | 2273 | 2166 | 2189 | 2103 | 2090 |
| ■ Southern Regions | 1744 | 1708 | 1687 | 1656 | 1725 | 1726 | 1710 | 1728 | 1767 | 1630 |
| ▲ Northern Regions | 419  | 494  | 472  | 485  | 500  | 547  | 456  | 461  | 336  | 460  |



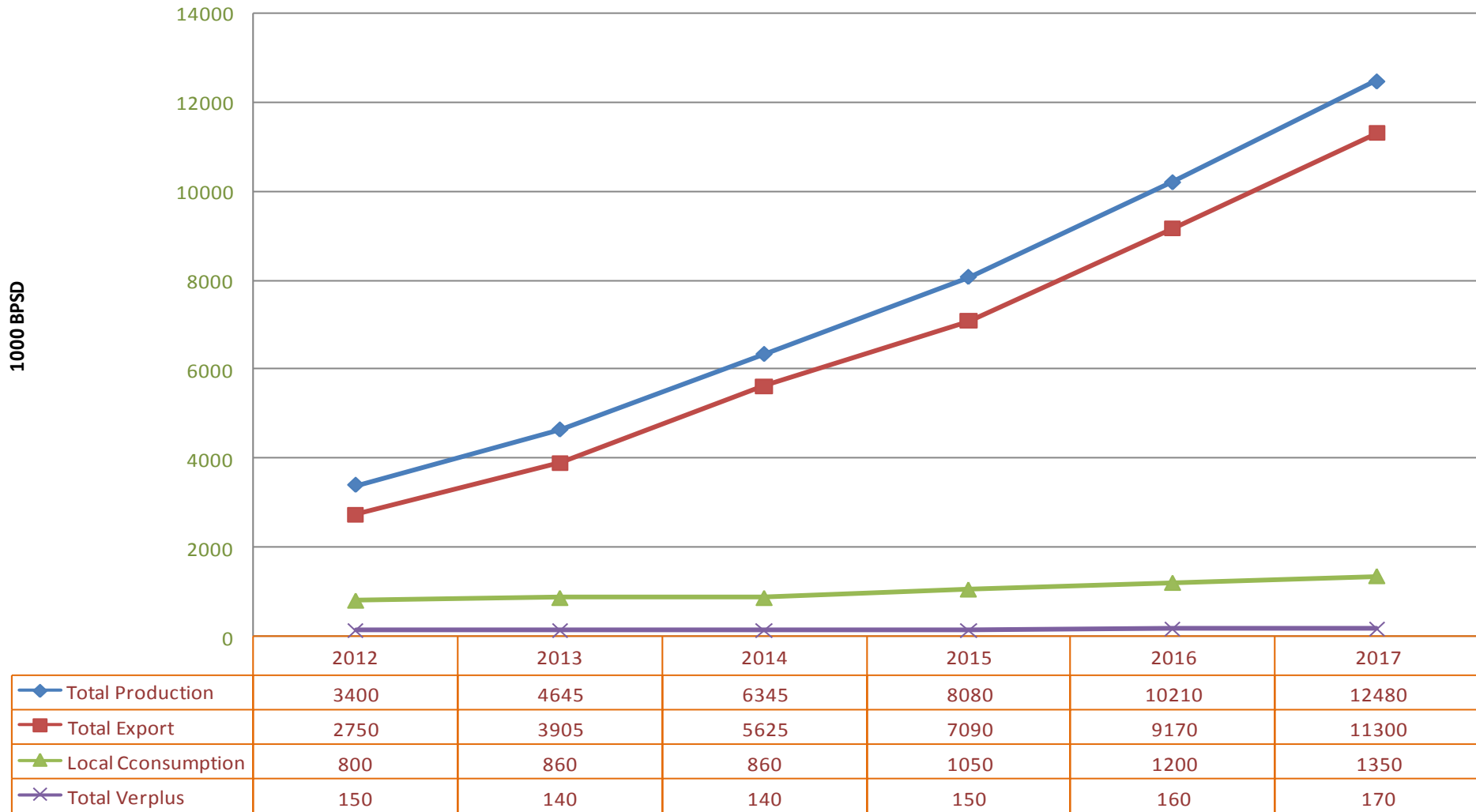
# Crude Oil Production Plan for Northern, Midland, and Southern Regions from 2012 to 2017



|                        | 2012 | 2013 | 2014 | 2015 | 2016 | 2017  |
|------------------------|------|------|------|------|------|-------|
| ◆ Southern Regions     | 2390 | 3500 | 4800 | 6200 | 8000 | 10000 |
| ■ Northern Regions     | 580  | 620  | 750  | 850  | 1000 | 1000  |
| ▲ Maissan's Oil Fields | 150  | 215  | 460  | 680  | 830  | 1080  |
| × Midland Region       | 130  | 160  | 185  | 200  | 230  | 250   |
| * Kurdistan Territory  | 150  | 150  | 150  | 150  | 150  | 150   |



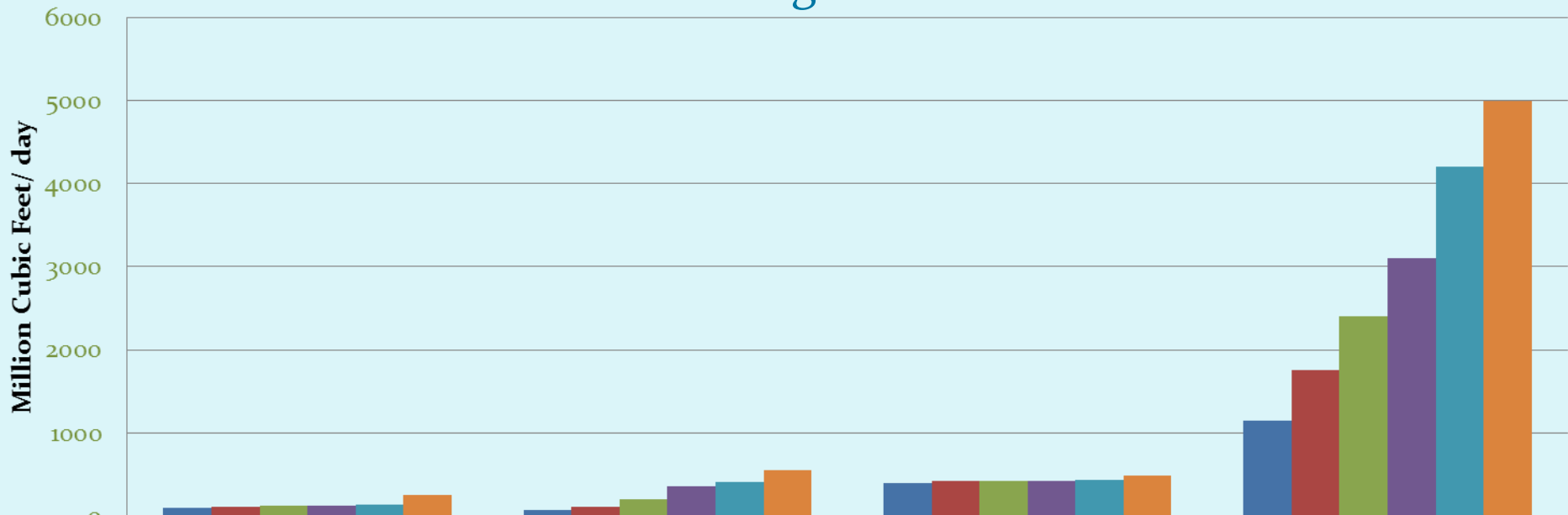
# Total Crude Oil Production & Consumption Plan from 2012 to 2017





# Associated Gas Production Plan from 2012 to 2017

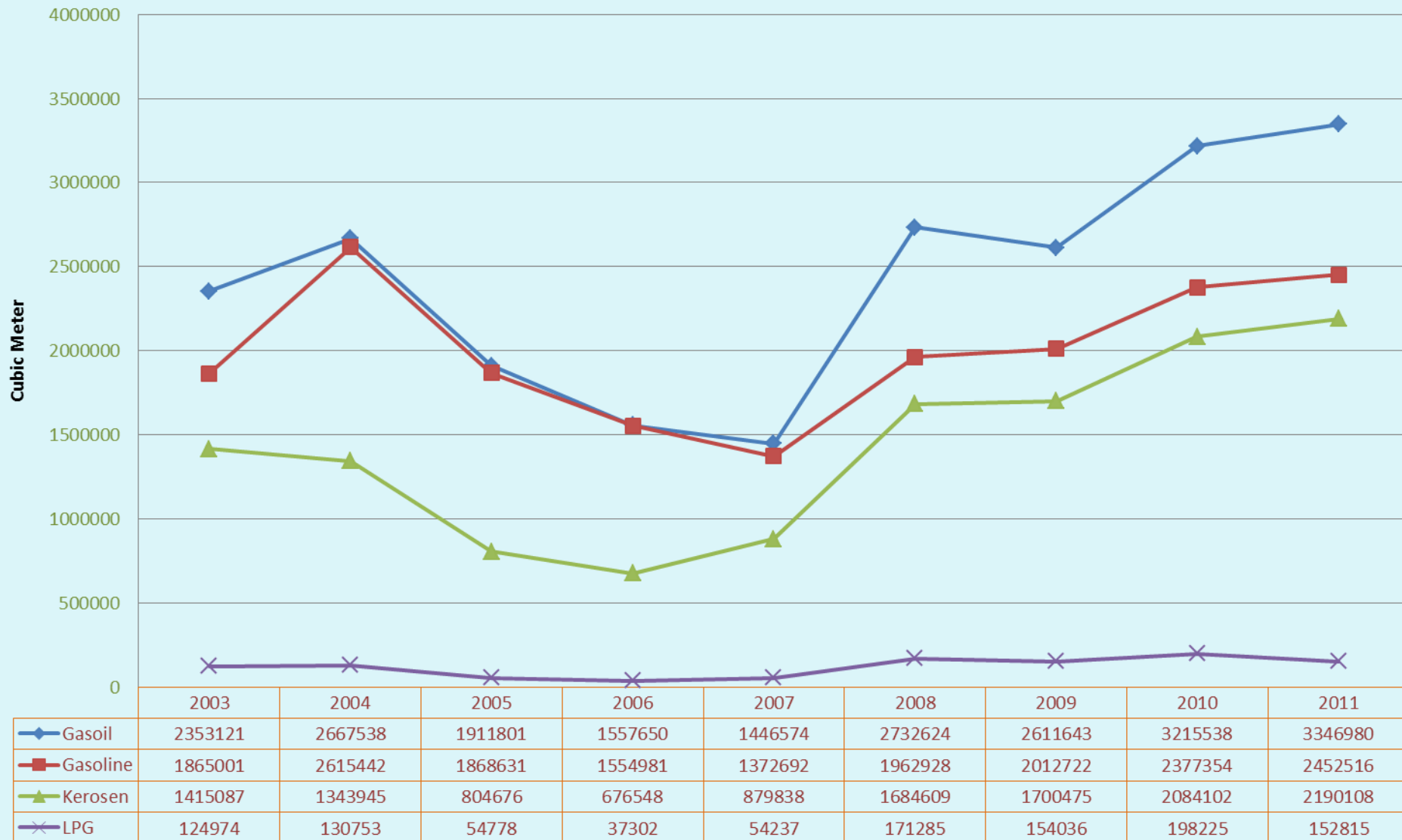
Iraq has natural gas reserves totaling 112.6 Trillion Cubic Feet, the tenth largest in the world



|        | Midland Oil Company | Maissan Oil Company | North Oil Company | South Oil Company |
|--------|---------------------|---------------------|-------------------|-------------------|
| ■ 2012 | 90                  | 70                  | 390               | 1150              |
| ■ 2013 | 110                 | 110                 | 420               | 1750              |
| ■ 2014 | 120                 | 200                 | 425               | 2400              |
| ■ 2015 | 120                 | 350                 | 425               | 3100              |
| ■ 2016 | 130                 | 400                 | 430               | 4200              |
| ■ 2017 | 250                 | 550                 | 480               | 5000              |



## NRC's Production from 2003 to 2011





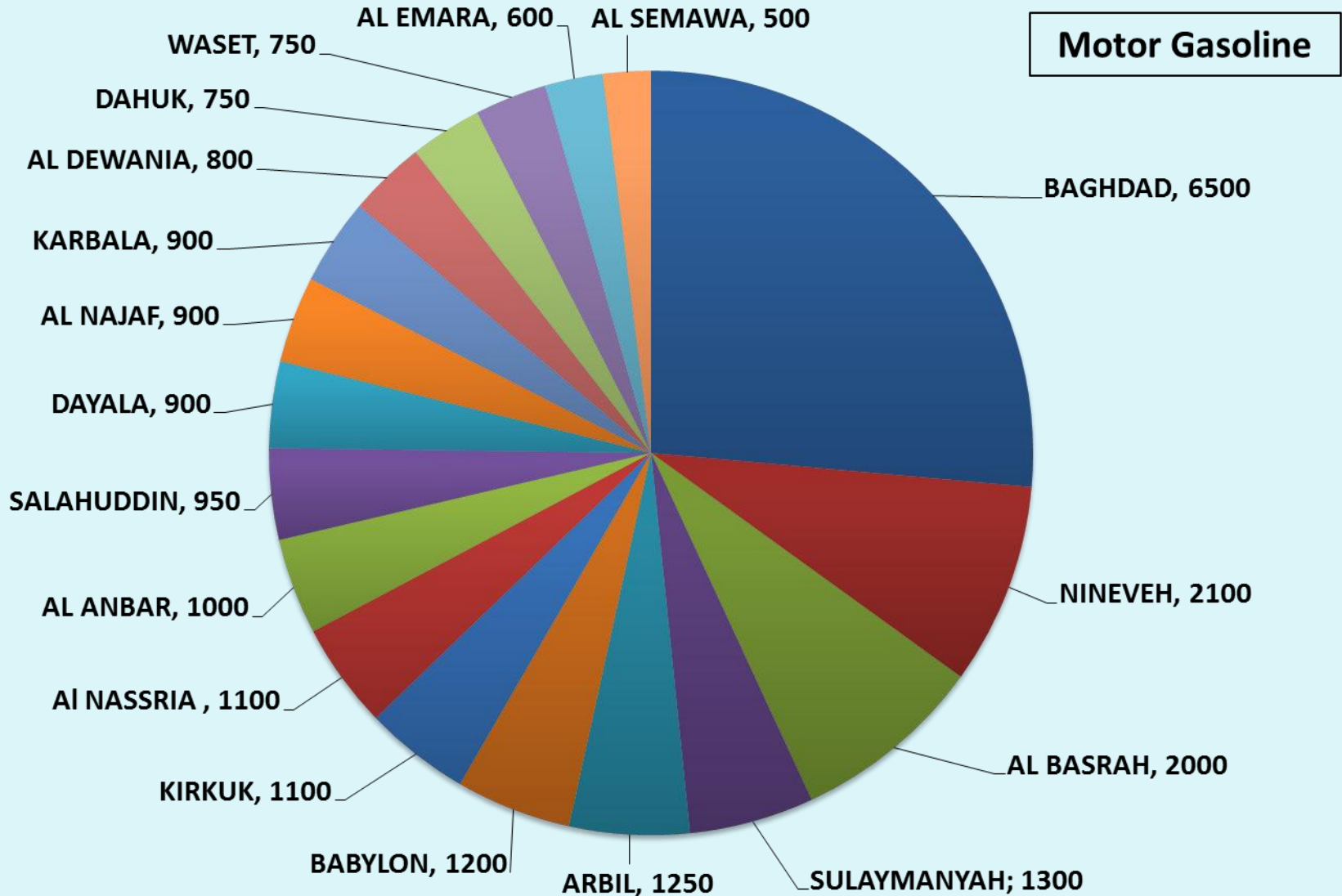


## Local Fuel Consumption for September 2011

- Dry Gas Consumption is **686** Million Cubic Feet/ Day.
- R.C.R Consumption is **93,670** M<sup>3</sup>/Day (Power Plants).
- Heavy Gas Oil Consumption is **7,235** M<sup>3</sup>/Day (Industrial Consumption).
- Gasoil Consumption is **61,268** M<sup>3</sup>/Day.
  - Local Production 20,543 M<sup>3</sup>/Day.
  - Exported 40,725 M<sup>3</sup>/Day.

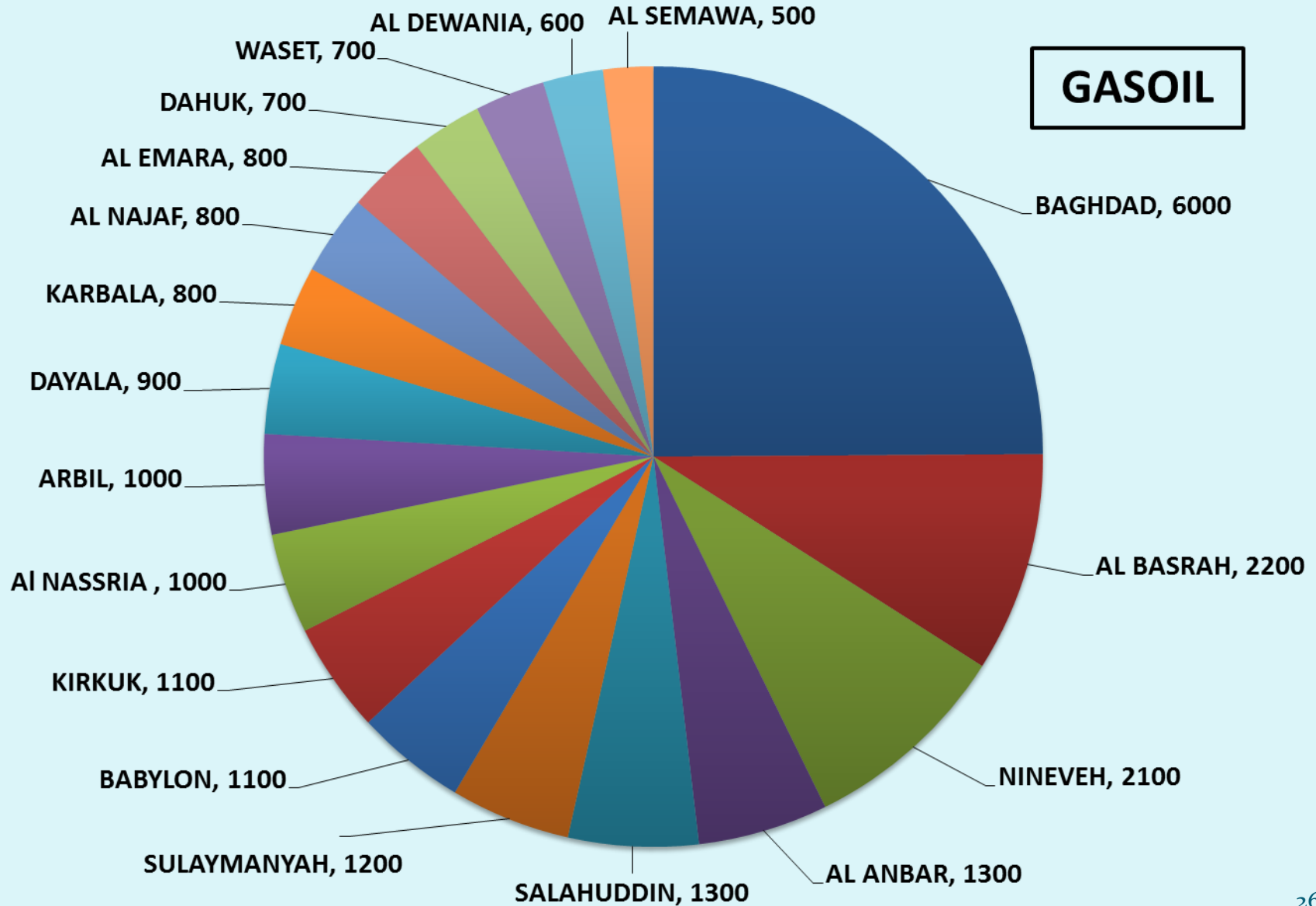
Ministry of Oil, Ministry of Industry, and Ministry of Electricity are the consumers.

# Shares of the Provinces in October 2011 - Cubic Meter/ Day



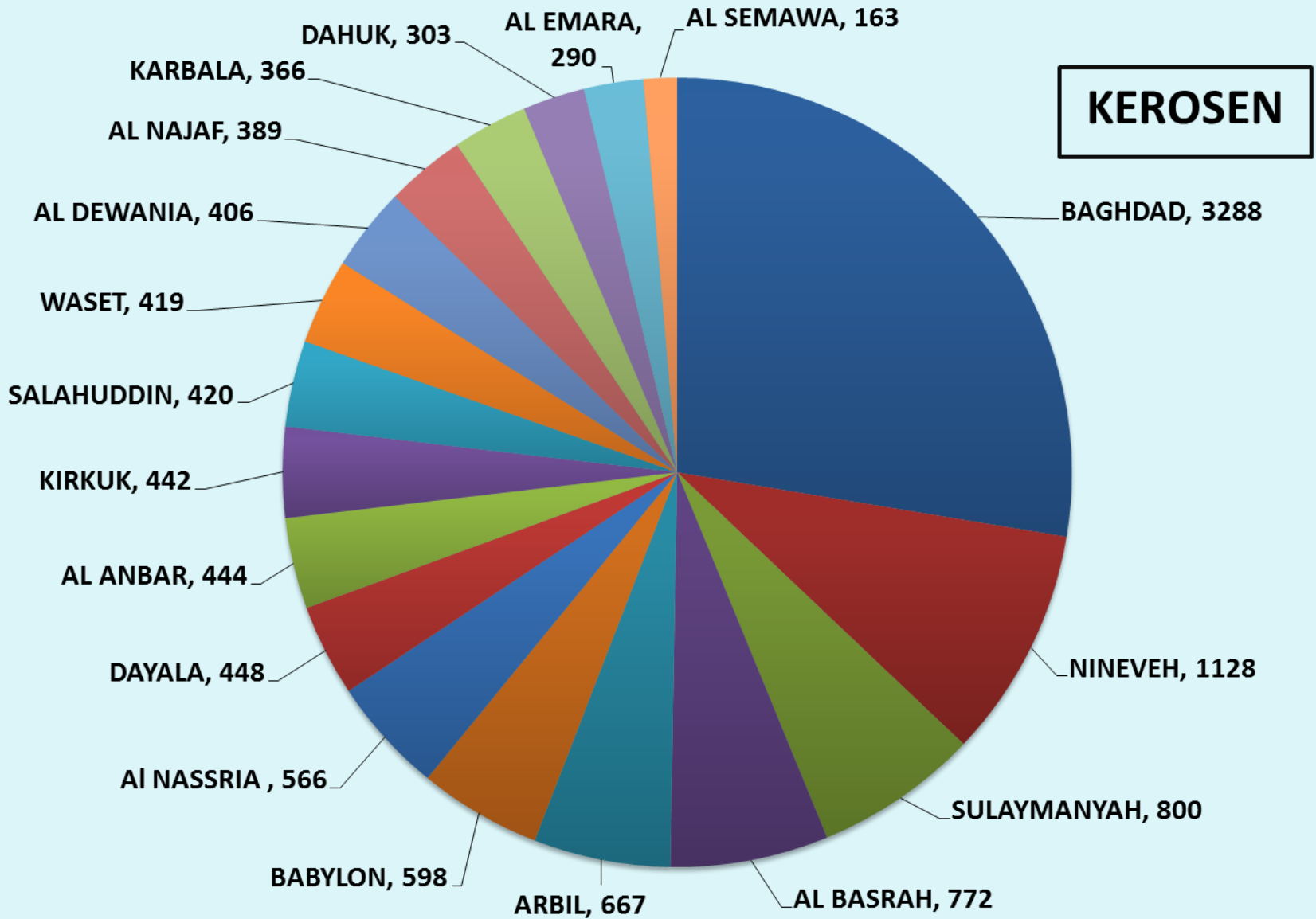


## Shares of the Provinces in October 2011 - Cubic Meter/ Day





## Shares of the Provinces in October 2011- Cubic Meter/ Day





## Shares of the Provinces in October 2011-Cubic Meter/ Day

| <b>Province</b> | <b>GASOLINE</b> | <b>KEROSEN</b> | <b>GASOIL</b> |
|-----------------|-----------------|----------------|---------------|
| BAGHDAD         | 6500            | 3288           | 6000          |
| NINEVEH         | 2100            | 1128           | 2100          |
| BASRAH          | 2000            | 772            | 2200          |
| SULAYMANYAH     | 1300            | 800            | 1200          |
| ARBIL           | 1250            | 667            | 1000          |
| BABYLON         | 1200            | 598            | 1100          |
| KIRKUK          | 1100            | 442            | 1100          |
| NASSRIA         | 1100            | 566            | 1000          |
| ANBAR           | 1000            | 444            | 1300          |
| SALAHUDDIN      | 950             | 420            | 1300          |
| DAYALA          | 900             | 448            | 900           |
| NAJAF           | 900             | 389            | 800           |
| KARBALA         | 900             | 366            | 800           |
| DEWANIA         | 800             | 406            | 600           |
| DAHUK           | 750             | 303            | 700           |
| WASET           | 750             | 419            | 700           |
| EMARA           | 600             | 290            | 800           |
| SEMAWA          | 500             | 163            | 500           |



# Contracts

- Baker Hughes awarded two year contract to provide full drilling and completion services for 23 wells in the West Qurna field in southeast Iraq.
- Shell's long-standing plan to capture and refine gas in southern Iraq project had been initiated by Iraq's South Gas Company, which owns a 51% stake, and Japan's Mitsubishi Corporation, which has five %. The \$ 12.5 Billion investment project now has to be approved by Iraq's cabinet.
- Refinery of Karbala Corporation (RKC) wins \$ 6.5 Billion Refinery contract in southern Iraq.
- Iraq and BP yet to agree on Multi-billion-dollar oil field Water injection Projects costs in southern Iraq. BP is developing Iraq's largest oil field, Rumaila, near Basra which is producing 1,3million barrels aday.



# Conclusions

Our primary goal is to:-

- Optimizing production levels.
- Improving products quality.
- Improving efficiency.
  - a- Replacing North Refinery's Control System with DCS system.
  - b- Upgrading Sal. 1, Sal. 2, and N.R. refinery.
  - c- Replacing old pumps and compressor with new ones.
  - d- Replacing old Furnace's tubs with new ones.
  - e- Replacing old North Refinery's boilers with new ones.
- Enhancing safety and security.
- Reducing downtime.
- Be green with the environment.
  - Rehabilitation North Refinery's Waste Water Treatments to improve water quality that is been discharged to the river.

**Thank you for your attention**

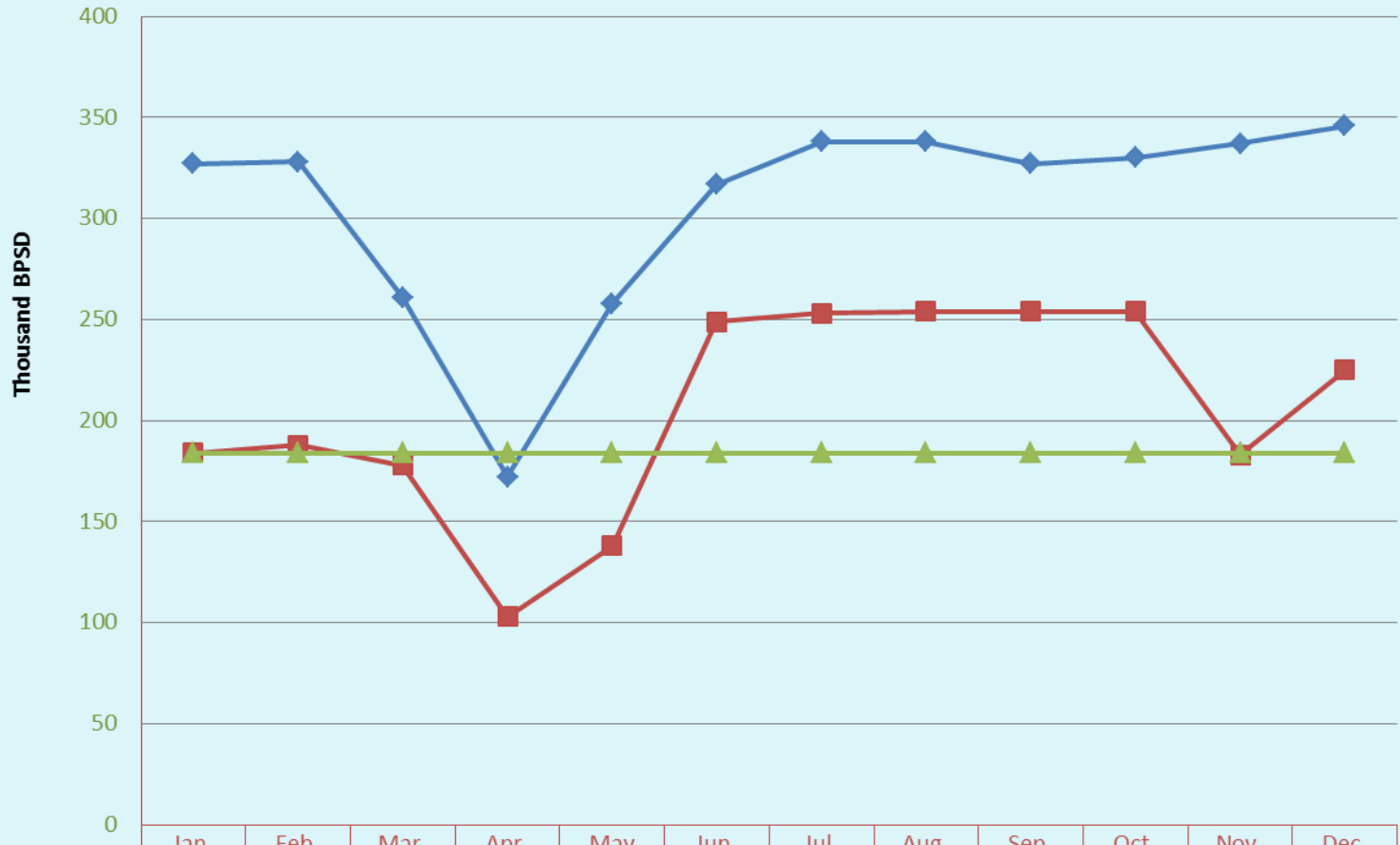


# Refining Plan for 2012





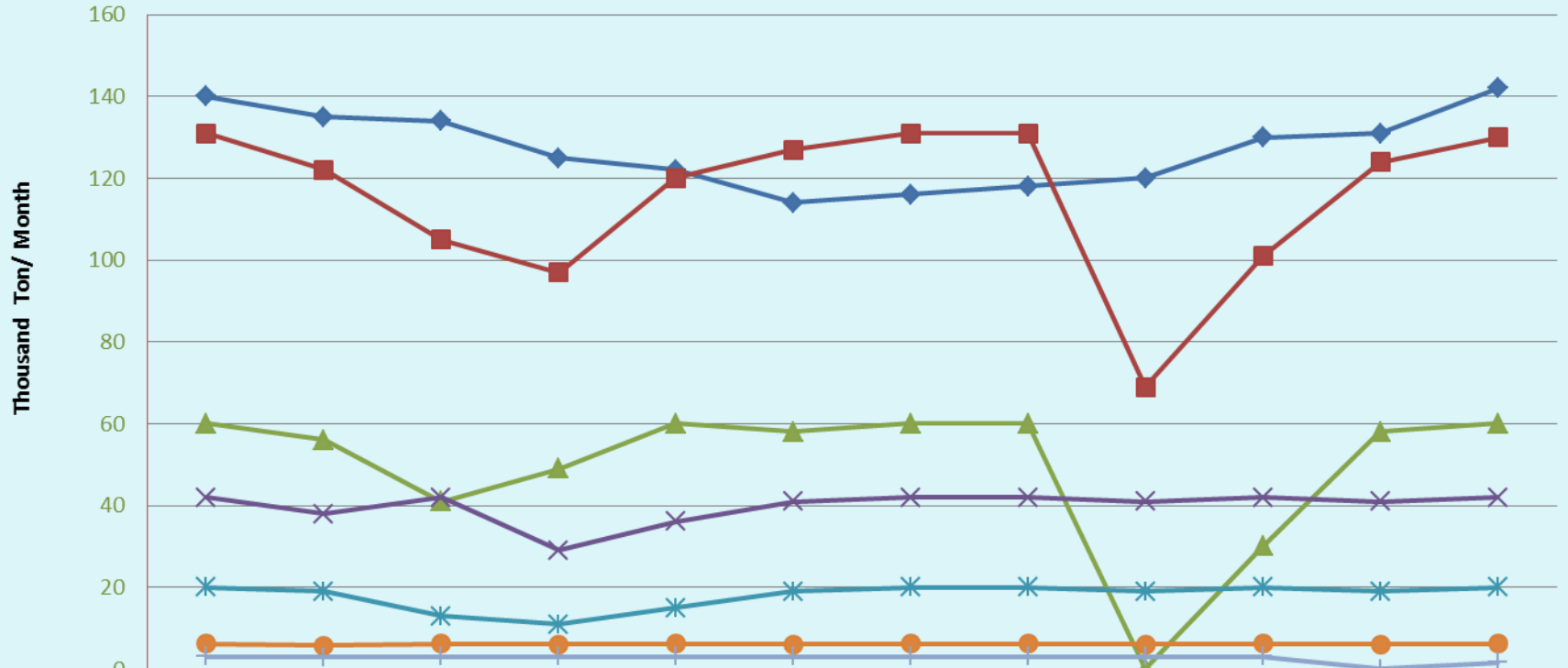
# Refining Capacity Plan for 2012



|                              |     |     |     |     |     |     |     |     |     |     |     |     |
|------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| ◆ North Refineries Company   | 327 | 328 | 261 | 172 | 258 | 317 | 338 | 338 | 327 | 330 | 337 | 346 |
| ■ South Refineries Company   | 184 | 188 | 178 | 103 | 138 | 249 | 253 | 254 | 254 | 254 | 183 | 225 |
| ▲ Midland Refineries Company | 184 | 184 | 184 | 184 | 184 | 184 | 184 | 184 | 184 | 184 | 184 | 184 |



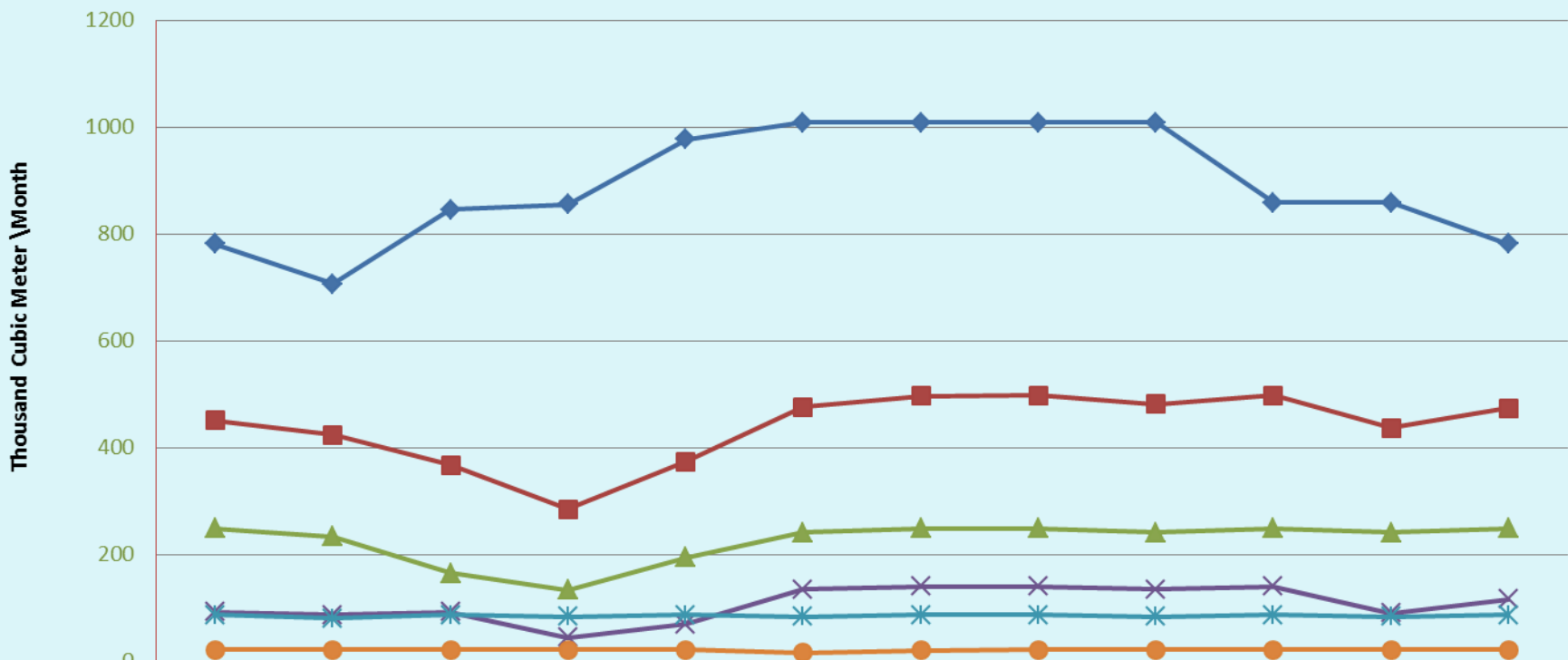
# L.P.G. Production and Consumption Plan for 2012



|                     | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. |
|---------------------|------|------|------|------|-----|------|------|------|------|------|------|------|
| ◆ Total Consumption | 140  | 135  | 134  | 125  | 122 | 114  | 116  | 118  | 120  | 130  | 131  | 142  |
| ■ Total Production  | 131  | 122  | 105  | 97   | 120 | 127  | 131  | 131  | 69   | 101  | 124  | 130  |
| ▲ Southern Gas      | 60   | 56   | 41   | 49   | 60  | 58   | 60   | 60   | 0    | 30   | 58   | 60   |
| ✕ Northern Gas      | 42   | 38   | 42   | 29   | 36  | 41   | 42   | 42   | 41   | 42   | 41   | 42   |
| ✱ Baiji Refinery    | 20   | 19   | 13   | 11   | 15  | 19   | 20   | 20   | 19   | 20   | 19   | 20   |
| ● Doura Refinery    | 6.2  | 5.8  | 6.2  | 6    | 6.2 | 6    | 6.2  | 6.2  | 6    | 6.2  | 6    | 6.2  |
| + Basrah Refinery   | 3.1  | 2.9  | 3    | 3    | 3.1 | 3    | 3.1  | 3.1  | 3    | 3.1  | 0    | 1.6  |



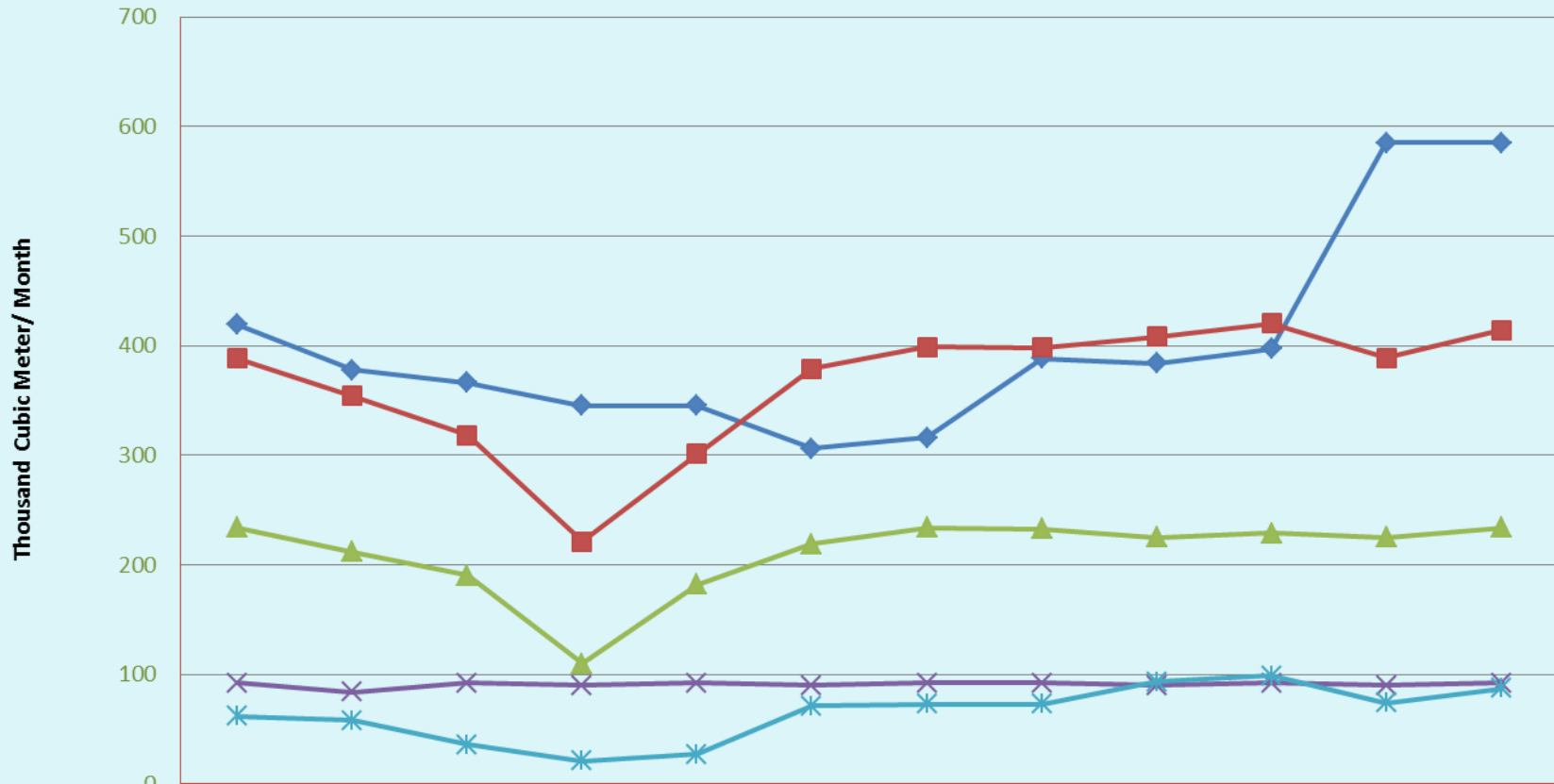
# Gasoline Production and Consumption Plan for 2012



|                     | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. |
|---------------------|------|------|------|------|-----|------|------|------|------|------|------|------|
| ◆ Total Consumption | 781  | 706  | 846  | 855  | 977 | 1008 | 1008 | 1008 | 1008 | 859  | 859  | 781  |
| ■ Total Production  | 451  | 424  | 367  | 285  | 374 | 476  | 497  | 498  | 482  | 498  | 437  | 474  |
| ▲ Baiji Refinery    | 249  | 234  | 165  | 134  | 195 | 241  | 249  | 249  | 241  | 249  | 241  | 249  |
| ✕ Basrah Refinery   | 93   | 87   | 93   | 45   | 70  | 135  | 140  | 140  | 135  | 140  | 90   | 116  |
| ✧ Doura Refinery    | 87   | 81   | 87   | 84   | 87  | 84   | 87   | 87   | 84   | 87   | 84   | 87   |
| ● South Gas Company | 22   | 22   | 22   | 22   | 22  | 16   | 21   | 22   | 22   | 22   | 22   | 22   |



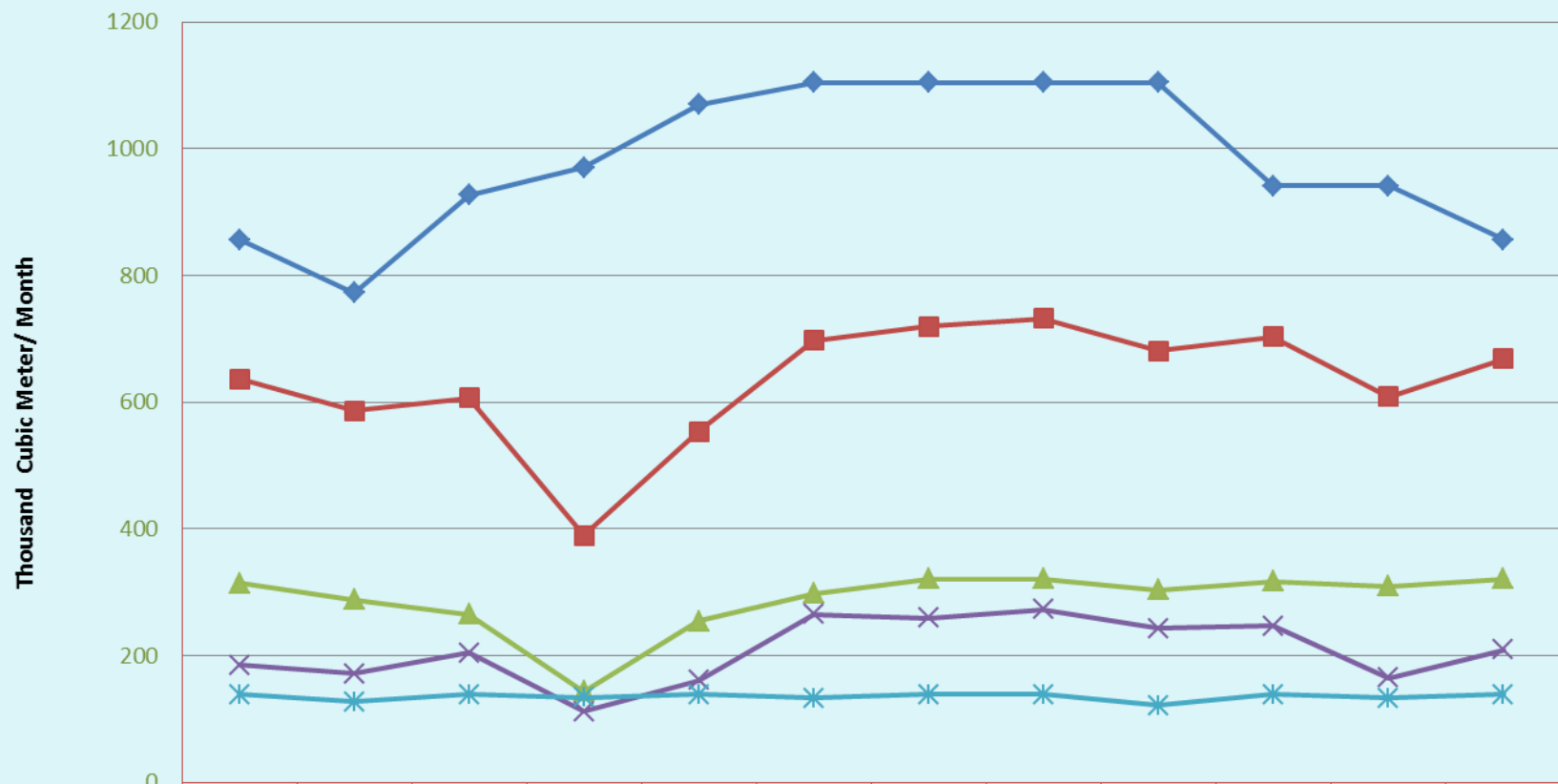
# Kerosen Production and Consumption Plan for 2012



|                              | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. |
|------------------------------|------|------|------|------|-----|------|------|------|------|------|------|------|
| ◆ Total Consumption          | 419  | 378  | 366  | 345  | 345 | 306  | 316  | 388  | 384  | 397  | 585  | 585  |
| ■ Total Production           | 388  | 354  | 318  | 221  | 301 | 379  | 399  | 398  | 408  | 420  | 389  | 414  |
| ▲ North Refineries Company   | 234  | 212  | 190  | 110  | 182 | 219  | 234  | 233  | 225  | 229  | 225  | 234  |
| × Midland Refineries Company | 92   | 84   | 92   | 90   | 92  | 90   | 92   | 92   | 90   | 92   | 90   | 92   |
| * South Refineries Company   | 62   | 58   | 36   | 21   | 27  | 71   | 73   | 73   | 93   | 99   | 74   | 87   |



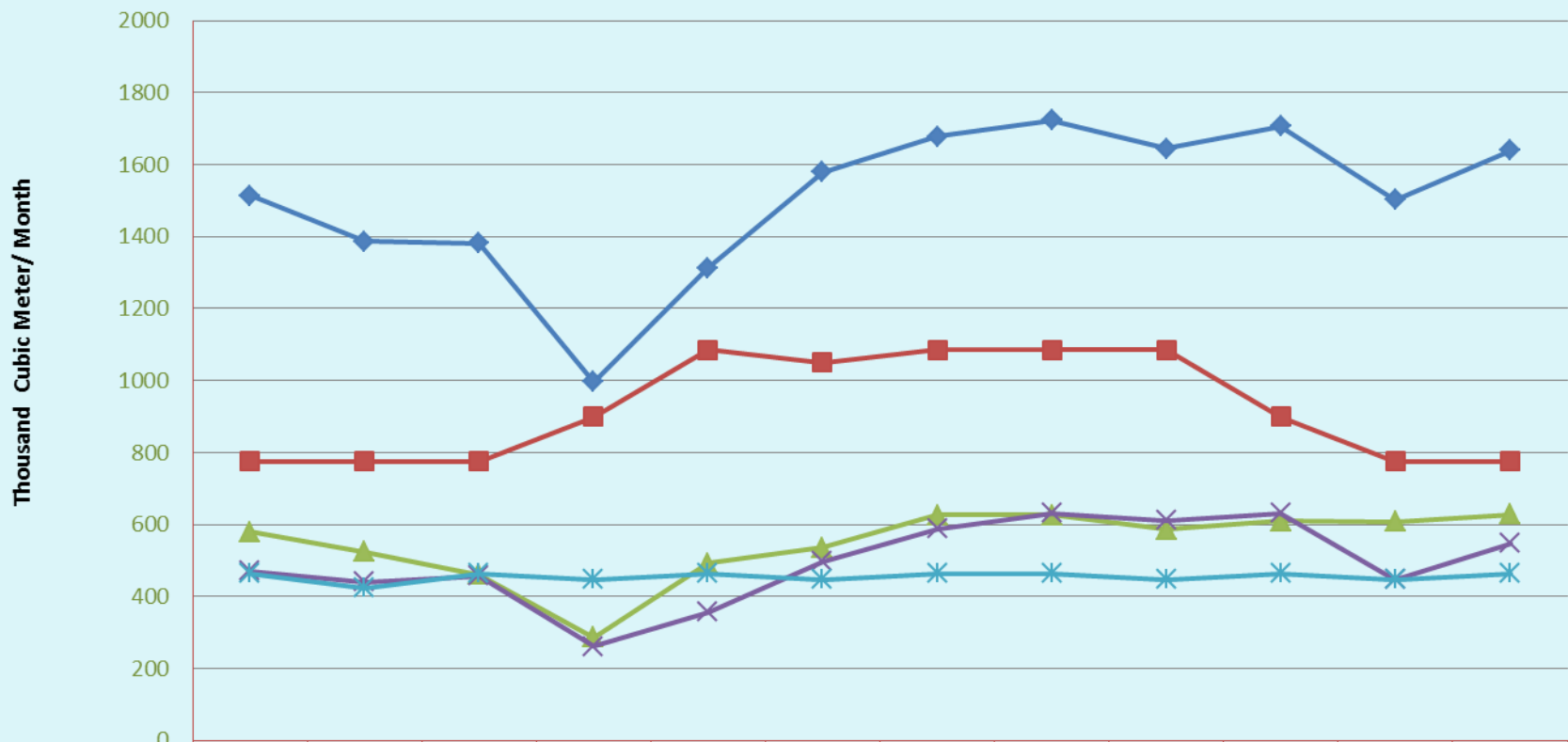
# Gasoil Production and Consumption Plan for 2012



|                              | Jan. | Feb. | Mar. | Apr. | May  | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| ◆ Total Consumption          | 856  | 773  | 927  | 970  | 1070 | 1104 | 1104 | 1104 | 1104 | 941  | 941  | 856  |
| ■ Total Production           | 637  | 586  | 607  | 390  | 554  | 697  | 719  | 732  | 681  | 703  | 609  | 668  |
| ▲ North Refineries Company   | 314  | 288  | 265  | 144  | 255  | 298  | 321  | 321  | 304  | 317  | 310  | 321  |
| ✕ South Refineries Company   | 185  | 172  | 204  | 112  | 161  | 265  | 259  | 273  | 243  | 247  | 165  | 209  |
| * Midland Refineries Company | 139  | 127  | 139  | 134  | 139  | 133  | 139  | 139  | 122  | 139  | 133  | 139  |



# R.C.R. Production and Consumption Plan for 2012



|                              | Jan. | Feb. | Mar. | Apr. | May  | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| ◆ Total Production           | 1514 | 1387 | 1382 | 996  | 1313 | 1580 | 1678 | 1723 | 1645 | 1706 | 1502 | 1639 |
| ■ Total Consumption          | 775  | 775  | 775  | 900  | 1085 | 1050 | 1085 | 1085 | 1085 | 900  | 775  | 775  |
| ▲ North Refineries Company   | 579  | 524  | 461  | 287  | 492  | 536  | 627  | 627  | 586  | 610  | 608  | 628  |
| ✕ South Refineries Company   | 471  | 440  | 457  | 262  | 357  | 497  | 587  | 632  | 612  | 632  | 447  | 547  |
| ✧ Midland Refineries Company | 464  | 423  | 464  | 447  | 464  | 447  | 464  | 464  | 447  | 464  | 447  | 464  |