



# شرکت مدیریت تولید برق اصفهان

*Esfahan Power Generation Management Co.*



## بولتن آماری شهریور ماه ۱۳۹۵



تهیه شده در معاونت مهندسی و برنامه ریزی



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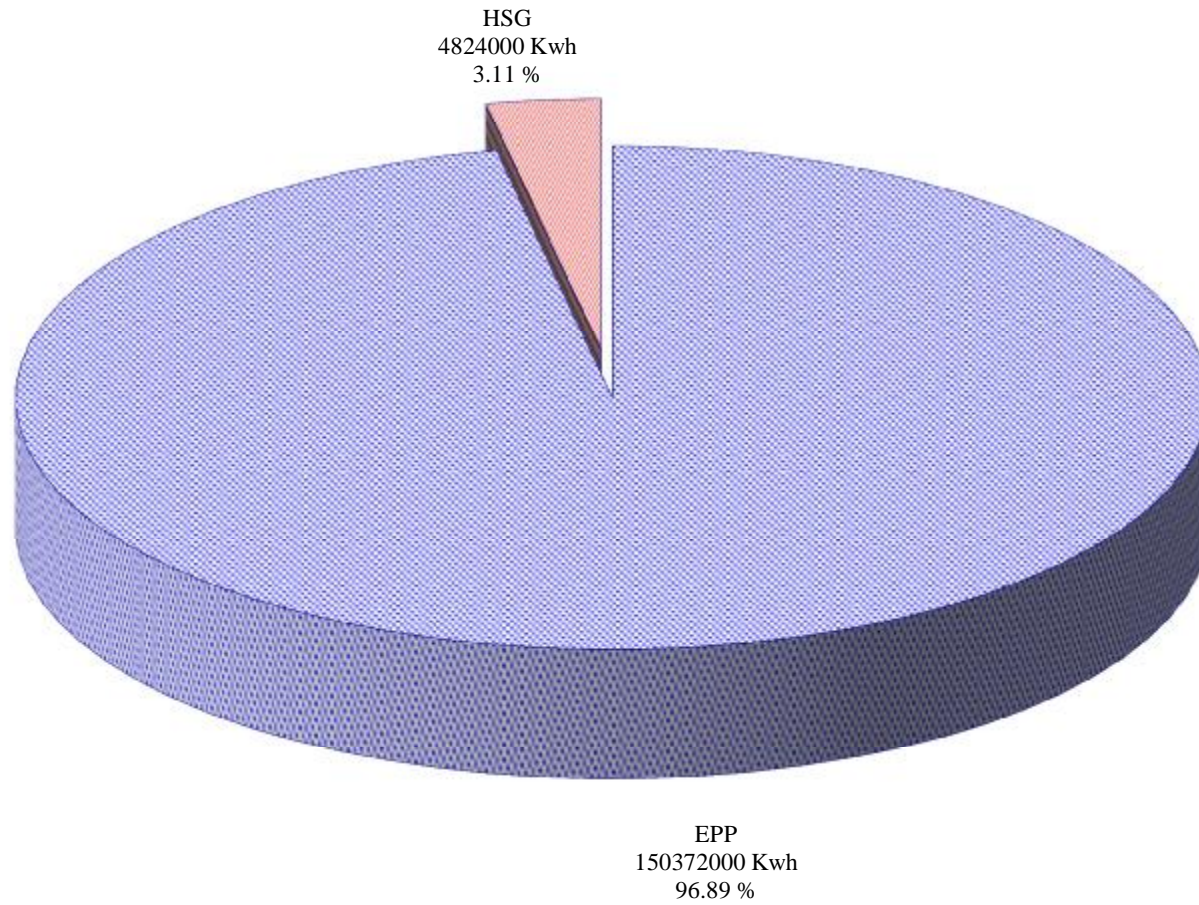
**Contractual Generation - Actual Generation till (1395/06/31)**

| Plant        | Contractual Net generation | Actual Net Generation | Actual        | Reminded              | Cont.Net generation till this month | Deviation till this month |
|--------------|----------------------------|-----------------------|---------------|-----------------------|-------------------------------------|---------------------------|
| Code         | KWH                        | KWH                   | %             | KWH                   | %                                   | %                         |
| EST          | 3,700,000,000              | 1,478,718,000         | 39.97%        | -2,221,282,000        | 50.97%                              | -11.01%                   |
| HSG          | 72,000,000                 | 52,978,030            | 73.58%        | -19,021,970           | 50.00%                              | 23.58%                    |
| <b>Total</b> | <b>3,772,000,000</b>       | <b>1,531,696,030</b>  | <b>40.61%</b> | <b>-2,240,303,970</b> | <b>50.95%</b>                       | <b>-10.35%</b>            |

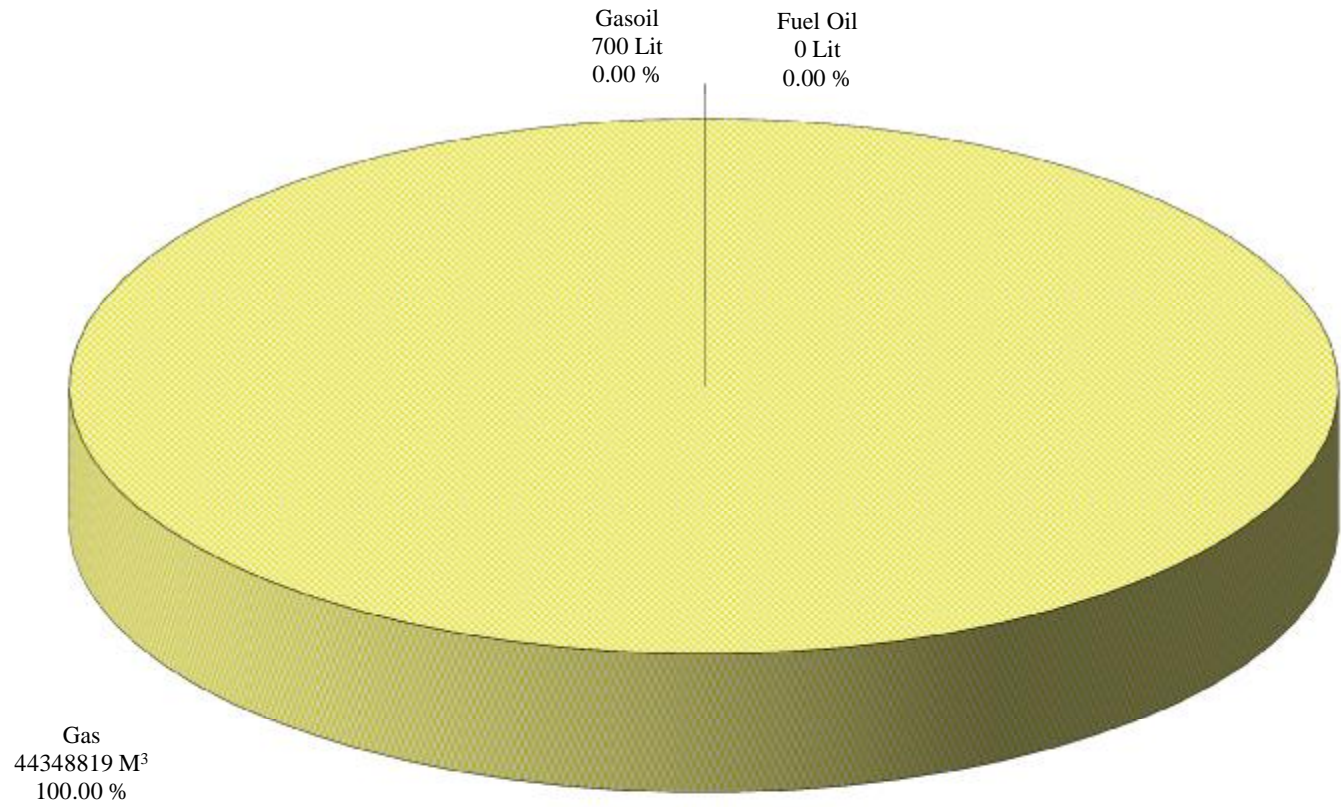
**Total Plants Information from First Synchronizing & This Year til (1395/06/31)**

| Plants<br>code | Nom.<br>Power<br>(MW) | Net<br>Power<br>(MW) | First<br>Synchronize<br>Date | Gross<br>Production (MWH) |                    | Net<br>Production (MWH) |                    |
|----------------|-----------------------|----------------------|------------------------------|---------------------------|--------------------|-------------------------|--------------------|
|                |                       |                      |                              | F.Synch.                  | This Year          | F.Synch.                | This Year          |
| EST            | 830                   | 765.5                | 48/08/04                     | 158014244.800             | 1614868.000        | 140759156.800           | 1478718.000        |
|                |                       |                      | 48/08/04                     |                           |                    |                         |                    |
|                |                       |                      | 53/11/06                     |                           |                    |                         |                    |
|                |                       |                      | 59/12/20                     |                           |                    |                         |                    |
|                |                       |                      | 67/01/01                     |                           |                    |                         |                    |
| HSG            | 87                    | 69.0                 | 70/01/20                     | 1070866.543               | 53030.000          | 972722.040              | 52978.030          |
|                |                       |                      | 68/04/15                     |                           |                    |                         |                    |
|                |                       |                      | 68/11/10                     |                           |                    |                         |                    |
| <b>Total</b>   | <b>87</b>             | <b>834.5</b>         | <b>.....</b>                 | <b>159085111.343</b>      | <b>1667898.000</b> | <b>141731878.840</b>    | <b>1531696.030</b> |

**Monthly Plants Gross Production Graph - Shahrivar 1395**



**Plants Fuel Consumption Comparison - Shahrivar 1395**



**Plants Thermoelectric Information - Shahrivar 1395**

| Plant Code   | Nominal Power (MW) | Production        |                   | Fuel Consumption |              |                 | Heat Rate Kcal/Kwh | Steam Outage No. |           | Succ. Start |
|--------------|--------------------|-------------------|-------------------|------------------|--------------|-----------------|--------------------|------------------|-----------|-------------|
|              |                    | Gross (MWH)       | Net (MWH)         | Fuel Oil (Lit)   | Gasoil (Lit) | Gas (MC)        |                    | This mounth      | This year | Gas No.     |
| EST          | 830                | 150372.000        | 135529.000        | 0                | 0            | 42556000        | 2418               | 3                | 28        | -----       |
| HSG          | 69                 | 4824.000          | 4818.640          | -----            | 700          | 1792819         | 3177               | -----            | -----     | 7           |
| <b>TOTAL</b> | <b>899</b>         | <b>155196.000</b> | <b>140347.640</b> | <b>0</b>         | <b>700</b>   | <b>44348819</b> | <b>2442</b>        | <b>3</b>         | <b>28</b> | <b>7</b>    |

\* GAS CONSUMTION IS ACCORDING TO ESFEHAN POWER PLANT COUNTERS.



### Monthly Plants Avai. & Unavailability - Shahrivar 1395

| Plant Code   | Energy (MWH) |            |            |            | Avail. | Unavailability        |       |       |       |                       |       |       |        |       |       |   |               |       |       |       |               | Total |       |       |       |       |        |        |        |
|--|--------------|------------|------------|------------|--------|-----------------------|-------|-------|-------|-----------------------|-------|-------|--------|-------|-------|---|---------------|-------|-------|-------|---------------|-------|-------|-------|-------|-------|--------|--------|--------|
|  | Nominal      | Gross      | Int. Cons. | Net        |        | Outage ( Internal ) % |       |       |       | Outage ( External ) % |       |       |        |       | PO    | PM  | Limit. Int. % |       |       |       | Limit. Ext. % |       |       |       |       |       |        |        |        |
|  |              |            |            |            |        | FO                    | FA    | FS    | FP    | FG                    | FQ    | FD    | FC     | FW    |       |   | LF1           | LF2   | LA    | LP    | SR            |       | LQ    | LG    | LW    | LD    | LC     |        |        |
| EST  | 617520       | 150372.000 | 14843.000  | 135529.000 | 24.35% | 0.00%                 | 0.00% | 0.00% | 0.00% | 0.00%                 | 0.00% | 0.00% | 56.30% | 0.00% | 0.00% | 0.00%   | 0.00%         | 0.00% | 0.00% | 0.13% | 0.00%         | 1.58% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00%  | 17.64% | 75.65% |
| HSG  | 51336        | 4824.000   | 5.360      | 4818.640   | 9.40%  | 0.00%                 | 0.00% | 0.00% | 0.00% | 0.00%                 | 0.00% | 0.00% | 0.00%  | 0.00% | 0.00% | 33.33%  | 0.00%         | 0.00% | 0.00% | 0.00% | 57.27%        | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00%  | 0.00%  | 90.60% |
| Total  | 668856       | 155196.000 | 14848.360  | 140347.640 | 23.20% | 0.00%                 | 0.00% | 0.00% | 0.00% | 0.00%                 | 0.00% | 0.00% | 51.98% | 0.00% | 0.00% | 2.56%   | 0.00%         | 0.00% | 0.12% | 0.00% | 5.85%         | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 16.29% | 76.80% |        |
| <p>LF1= محدودیت فنی ، بخشی از محدودیت باعلل داخلی بدون برنامه مربوط به خرابی یا عملکرد نامطلوب تجهیزات</p> <p>LF2= خطای عملیات ، هر نوع خطا در عملیات کلیدزنی و دیگر عملیات بهره برداری یا هر نوع خطا در عملیات سرویس که در حین کار موجب محدودیت در قابلیت تولید</p> <p>LA= محدودیت باهماهنگی ، حالت واحدی که محدودیت در قابلیت تولید آن در برنامه سالیانه دیده نشده ولی به ضرورت و یا با مجوز دیسپاچینگ محدود می شود</p> <p>LP= محدودیت با برنامه ، حالت واحدی که در مدار است لیکن طبق برنامه سالیانه محدودیت در قابلیت تولید دارد</p> <p>SR= حالت واحدی که قادر به تولید با قدرت کامل یا بخشی از قدرت می باشد لیکن بعلا محدودیت نیاز شبکه تمام قدرت عملی خود را تولید نمی کند</p> <p>LQ= محدودیت تحویل سوخت ، ناشی از عدم تحویل سوخت به میزان معین یا در زمان مشخص</p> <p>LG= محدودیت شبکه ، ناشی از اشکالات شبکه (خطوط و پستها)</p> <p>LW= محدودیت ناشی از کمبود آب</p> <p>LD= محدودیت بعلا سایر عوامل</p> <p>LC= محدودیت بعلا حوادث غیر مترقبه</p> |              |            |            |            |        |                       |       |       |       |                       |       |       |        |       |       | <p>FO= تریپ ، خروج اضطراری ، خروج بدلیل وقوع خرابی یا شرایط دیگر که در برنامه سالیانه دیده نشده</p> <p>FA= خروج باهماهنگی ، خروج اضطراری واحد بدون برنامه سالیانه و باهماهنگی دیسپاچینگ</p> <p>FS= خروج بعلا اشکال راه اندازی</p> <p>FP= افزایش اجباری زمان تعمیرات یا زمان بازسازی</p> <p>FG= خروج بدون برنامه سالیانه بدلیل اشکالات شبکه</p> <p>FQ= خروج بعلا عدم تامین سوخت</p> <p>FD= خروج بعلا سایر عوامل</p> <p>FC= خروج بعلا حوادث غیر مترقبه</p> <p>FW= خروج بعلا کمبود آب</p> <p>PO= تعمیرات بلندمدت و تعمیرات اساسی</p> <p>PM= بازدید و تعمیرات دوره ای</p> |               |       |       |       |               |       |       |       |       |       |        |        |        |

**Plants Annually Unavailability - 1395**

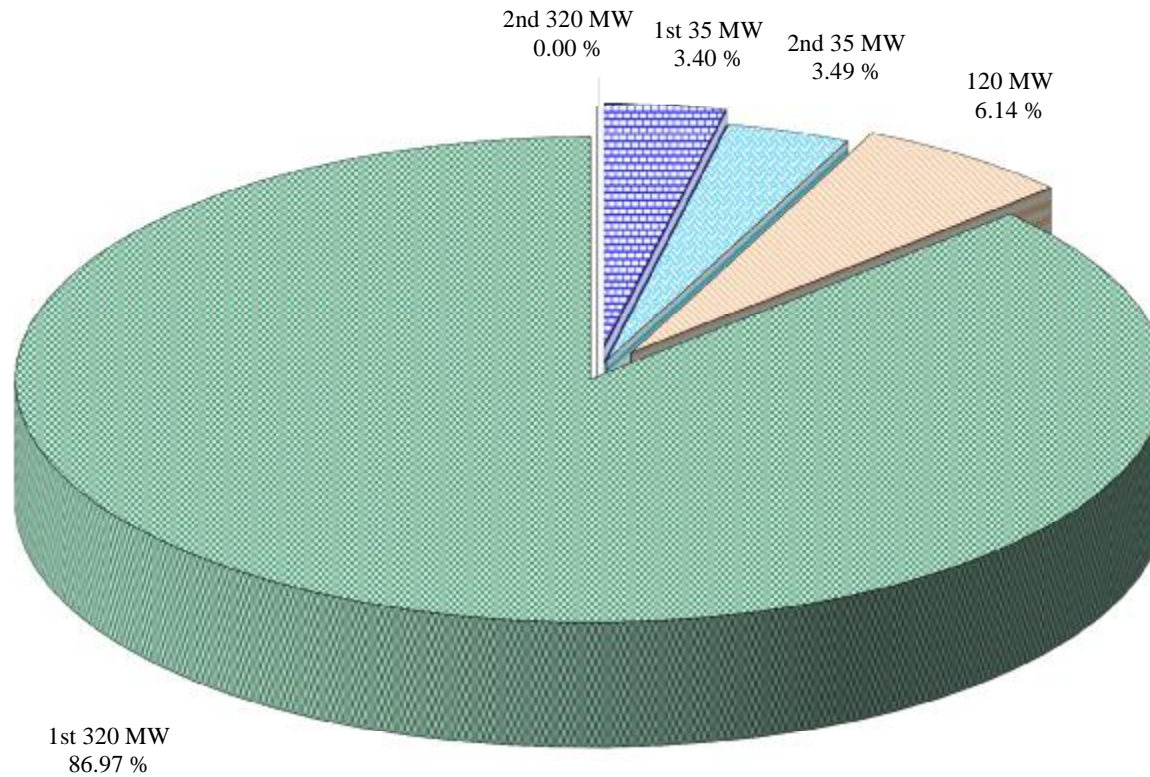
| <i>Units Trip Causes</i>                           | Plants | Far.   | Ord.   | Khor.  | Tir    | Mod.   | Shr.   | Meh. | Abn. | Azr. | Day | Bah. | Esf. | Average |
|--|--------|--------|--------|--------|--------|--------|--------|------|------|------|-----|------|------|---------|
| <i>Outage ( Internal ) %<br/>(FO-FA-FS-FP)</i>     | EST    | 4.32%  | 0.70%  | 1.91%  | 0.00%  | 0.10%  | 0.00%  |      |      |      |     |      |      | 1.17%   |
|  | HSG    | 0.00%  | 0.00%  | 0.00%  | 30.73% | 0.00%  | 0.00%  |      |      |      |     |      |      | 5.12%   |
| <i>Outage ( External ) %<br/>(FG-FQ-FD-FC-FW)</i>  | EST    | 0.00%  | 0.00%  | 20.44% | 56.53% | 57.13% | 56.30% |      |      |      |     |      |      | 31.73%  |
|  | HSG    | 0.00%  | 0.00%  | 0.00%  | 0.00%  | 0.00%  | 0.00%  |      |      |      |     |      |      | 0.00%   |
| <i>Overhaul (%)<br/>(PO)</i>                       | EST    | 0.00%  | 0.00%  | 0.00%  | 0.00%  | 0.00%  | 0.00%  |      |      |      |     |      |      | 0.00%   |
|  | HSG    | 0.00%  | 0.00%  | 0.00%  | 0.00%  | 0.00%  | 0.00%  |      |      |      |     |      |      | 0.00%   |
| <i>Periodic Maint. (%)<br/>(PM)</i>                | EST    | 31.97% | 3.99%  | 0.00%  | 0.00%  | 0.00%  | 0.00%  |      |      |      |     |      |      | 5.99%   |
|  | HSG    | 66.7%  | 66.7%  | 49.46% | 33.33% | 33.33% | 33.33% |      |      |      |     |      |      | 47.1%   |
| <i>Limit. Internal (%)<br/>(LF1-LF2-LA-LP)</i>     | EST    | 4.78%  | 4.74%  | 2.84%  | 0.31%  | 0.14%  | 0.13%  |      |      |      |     |      |      | 2.15%   |
|  | HSG    | 0.00%  | 0.00%  | 0.00%  | 0.00%  | 0.00%  | 0.00%  |      |      |      |     |      |      | 0.00%   |
| <i>Limit. External (%)<br/>(SR-LQ-LG-LW-LD-LC)</i> | EST    | 10.65% | 6.29%  | 22.31% | 14.04% | 19.65% | 19.22% |      |      |      |     |      |      | 15.36%  |
|  | HSG    | 33.10% | 32.45% | 28.42% | 5.12%  | 26.82% | 57.27% |      |      |      |     |      |      | 30.53%  |
| <i>Total 1395 %</i>                                | ----   | 55.39% | 22.13% | 49.83% | 70.75% | 75.73% | 76.80% |      |      |      |     |      |      | 58.44%  |
| <i>Total 1394 %</i>                                | ----   | 25.99% | 23.71% | 19.30% | 18.37% | 24.90% | 64.40% |      |      |      |     |      |      | 29.45%  |

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Esfahan Power Plant

**Total Units Information from First Synchronizing -(1395/06/31)**

| <i>Units No.</i> | <i>Nom. Power (MW)</i> | <i>Net Power (MW)</i> | <i>First Synchronize Date</i> | <i>Geo. Code</i> | <i>Gen. Code</i> | <i>Gross Production (MWH)</i> | <i>Net Production (MWH)</i> | <i>Operation Period (H)</i> | <i>Op.from last Overhaul (H)</i> |
|------------------|------------------------|-----------------------|-------------------------------|------------------|------------------|-------------------------------|-----------------------------|-----------------------------|----------------------------------|
| 1                | 35                     | 32.3                  | 48/08/04                      | -----            | -----            | 8127113.9                     | 7465374.4                   | 301038.1                    | 3478.0                           |
| 2                | 35                     | 32.3                  | 48/08/04                      | -----            | -----            | 8994592.6                     | 8304335.5                   | 328624.0                    | 3494.0                           |
| 3                | 120                    | 110.7                 | 53/11/06                      | -----            | -----            | 26955721.5                    | 24325762.1                  | 287431.0                    | 31619.0                          |
| 4                | 320                    | 295.1                 | 59/12/20                      | -----            | -----            | 58108701.0                    | 51543990.7                  | 232604.0                    | 31254.0                          |
| 5                | 320                    | 295.1                 | 67/01/01                      | -----            | -----            | 55828115.8                    | 49119694.1                  | 208415.0                    | 20474.0                          |
| <b>Total</b>     | 830                    | 765.5                 | -----                         | -----            | -----            | 158014244.8                   | 140759156.8                 | -----                       | -----                            |

**Units Monthly Production Comparison - Shahrivar 1395**



Esfahan Power Generation Management Co.  
Esfahan Power Plant

**Monthly Units Thermoelectric Information - Shahrivar 1395**

| Unit No.  | Nominal Power (MW) | Production        |                            |                   | Fuel Consumption |              |                    | Heat Rate Kcal/Kwh | Operation Period H | Stop Period H | Outage No. | Load Factor % |
|---|--------------------|-------------------|----------------------------|-------------------|------------------|--------------|--------------------|--------------------|--------------------|---------------|------------|---------------|
|   |                    | Gross (MWH)       | Internal Consumption (MWH) | Net (MWH)         | Fuel Oil (Lit)   | Gasoil (Lit) | Gas (MC)           |                    |                    |               |            |               |
| 1   | 35                 | 5116.000          | 408.000                    | 4708.000          | 0                | 0            | 1766000            | 2950               | 217                | 527           | 1          | 67.36%        |
| 2   | 35                 | 5243.000          | 349.000                    | 4894.000          | 0                | 0            | 1820000            | 2966               | 217                | 527           | 1          | 69.03%        |
| 3   | 120                | 9233.000          | 844.000                    | 8389.000          | 0                | 0            | 2618000            | 2423               | 136                | 608           | 1          | 56.57%        |
| 4   | 320                | 130780.000        | 12667.000                  | 118113.000        | 0                | 0            | 36352000           | 2375               | 744                | 0             | 0          | 54.93%        |
| 5   | 320                | 0.000             | 440.000                    | -440.000          | 0                | 0            | 0                  | 0                  | 0                  | 744           | 0          | 0.00%         |
| مصروف متفرقه  |                    |                   | 135.000                    |                   |                  |              |                    |                    |                    |               |            |               |
| <b>TOTAL</b>  | <b>830</b>         | <b>150372.000</b> | <b>14843.000</b>           | <b>135529.000</b> | <b>0</b>         | <b>0</b>     | <b>42556000</b>    | <b>2418</b>        | <b>-----</b>       | <b>-----</b>  | <b>3</b>   | <b>55.78%</b> |
| <b>Total Fuel Consumption from First of this year till End this month</b> |                    |                   |                            |                   | <b>0</b>         | <b>0</b>     | <b>451,980,000</b> |                    |                    |               |            |               |
|   |                    |                   |                            |                   | <b>0.00%</b>     | <b>0.00%</b> | <b>100.00%</b>     |                    |                    |               |            |               |

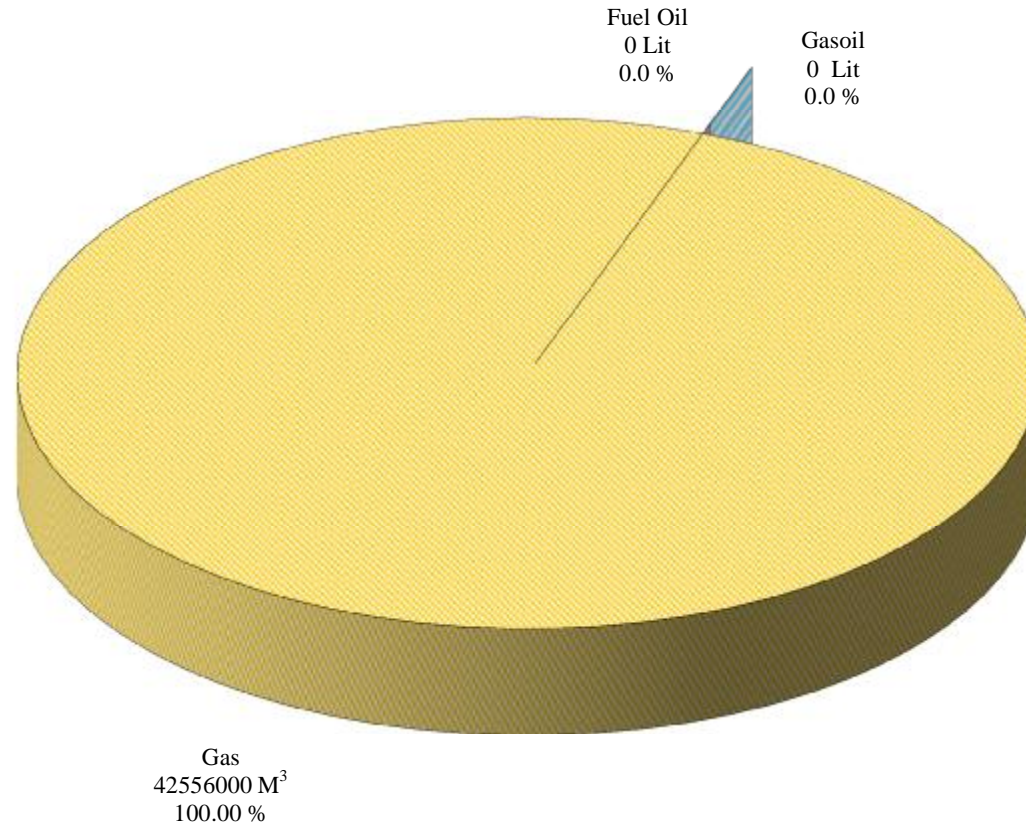


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**Units Annually Unavailability - 1395**

| <i>Units Trip Causes</i>                                  | Plants | Far.   | Ord.   | Khor.  | Tir     | Mod.    | Shr.    | Meh. | Abn. | Azr. | Day | Bah. | Esf. | Average |
|---|--------|--------|--------|--------|---------|---------|---------|------|------|------|-----|------|------|---------|
| <b>Outage ( Internal ) %<br/>(FO-FA-FS-FP)<br/>(%)</b>    | 1      | 0.00%  | 2.27%  | 0.00%  | 0.00%   | 0.09%   | 0.00%   |      |      |      |     |      |      | 0.39%   |
|   | 2      | 0.05%  | 13.08% | 0.00%  | 0.00%   | 0.00%   | 0.00%   |      |      |      |     |      |      | 2.19%   |
|   | 3      | 1.75%  | 0.00%  | 0.00%  | 0.00%   | 0.00%   | 0.00%   |      |      |      |     |      |      | 0.29%   |
|   | 4      | 6.40%  | 0.16%  | 0.00%  | 0.01%   | 0.26%   | 0.00%   |      |      |      |     |      |      | 1.14%   |
|   | 5      | 4.12%  | 0.00%  | 4.96%  | 0.00%   | 0.00%   | 0.00%   |      |      |      |     |      |      | 1.51%   |
| <b>Outage ( External ) %<br/>(FG-FQ-FD-FC-FW)<br/>(%)</b> | 1      | 0.00%  | 0.00%  | 40.29% | 100.00% | 58.99%  | 70.97%  |      |      |      |     |      |      | 45.04%  |
|   | 2      | 0.00%  | 0.00%  | 40.30% | 100.00% | 57.70%  | 70.97%  |      |      |      |     |      |      | 44.83%  |
|   | 3      | 0.00%  | 0.00%  | 49.70% | 82.46%  | 100.00% | 81.35%  |      |      |      |     |      |      | 52.25%  |
|   | 4      | 0.00%  | 0.00%  | 21.41% | 93.83%  | 58.58%  | 0.00%   |      |      |      |     |      |      | 28.97%  |
|   | 5      | 0.00%  | 0.00%  | 4.15%  | 0.00%   | 39.35%  | 100.00% |      |      |      |     |      |      | 23.92%  |
| <b>Overhaul %(PO)</b>                                     | 1      | 0.00%  | 0.00%  | 0.00%  | 0.00%   | 0.00%   | 0.00%   |      |      |      |     |      |      | 0.00%   |
|   | 2      | 0.00%  | 0.00%  | 0.00%  | 0.00%   | 0.00%   | 0.00%   |      |      |      |     |      |      | 0.00%   |
|   | 3      | 0.00%  | 0.00%  | 0.00%  | 0.00%   | 0.00%   | 0.00%   |      |      |      |     |      |      | 0.00%   |
|   | 4      | 0.00%  | 0.00%  | 0.00%  | 0.00%   | 0.00%   | 0.00%   |      |      |      |     |      |      | 0.00%   |
|   | 5      | 0.00%  | 0.00%  | 0.00%  | 0.00%   | 0.00%   | 0.00%   |      |      |      |     |      |      | 0.00%   |
| <b>Periodic Maint. %(PM)</b>                              | 1      | 0.00%  | 0.00%  | 0.00%  | 0.00%   | 0.00%   | 0.00%   |      |      |      |     |      |      | 0.00%   |
|   | 2      | 0.00%  | 3.39%  | 0.00%  | 0.00%   | 0.00%   | 0.00%   |      |      |      |     |      |      | 0.56%   |
|   | 3      | 35.48% | 0.00%  | 0.00%  | 0.00%   | 0.00%   | 0.00%   |      |      |      |     |      |      | 5.91%   |
|   | 4      | 0.00%  | 0.00%  | 0.00%  | 0.00%   | 0.00%   | 0.00%   |      |      |      |     |      |      | 0.00%   |
|   | 5      | 69.62% | 9.99%  | 0.00%  | 0.00%   | 0.00%   | 0.00%   |      |      |      |     |      |      | 13.27%  |
| <b>Limit. Internal<br/>(LF1-LF2-LA-LP)<br/>(%)</b>        | 1      | 27.71% | 25.50% | 11.90% | 0.00%   | 0.20%   | 0.00%   |      |      |      |     |      |      | 10.88%  |
|   | 2      | 13.43% | 12.77% | 7.39%  | 0.00%   | 0.19%   | 0.00%   |      |      |      |     |      |      | 5.63%   |
|   | 3      | 2.19%  | 0.11%  | 0.49%  | 0.08%   | 0.00%   | 0.87%   |      |      |      |     |      |      | 0.63%   |
|   | 4      | 5.44%  | 5.64%  | 3.83%  | 0.75%   | 0.31%   | 0.00%   |      |      |      |     |      |      | 2.66%   |
|   | 5      | 1.62%  | 2.41%  | 1.24%  | 0.01%   | 0.00%   | 0.00%   |      |      |      |     |      |      | 0.88%   |
| <b>Limit. External<br/>(SR-LQ-LG-LW-LD-LC)<br/>(%)</b>    | 1      | 0.00%  | 0.43%  | 11.84% | 0.00%   | 14.21%  | 9.39%   |      |      |      |     |      |      | 5.98%   |
|   | 2      | 0.23%  | 0.22%  | 11.79% | 0.00%   | 12.42%  | 8.90%   |      |      |      |     |      |      | 5.59%   |
|   | 3      | 7.93%  | 3.81%  | 5.00%  | 0.92%   | 0.00%   | 7.43%   |      |      |      |     |      |      | 4.18%   |
|   | 4      | 17.33% | 8.45%  | 22.38% | 2.41%   | 19.41%  | 45.06%  |      |      |      |     |      |      | 19.17%  |
|   | 5      | 7.30%  | 6.37%  | 31.02% | 33.66%  | 28.66%  | 0.00%   |      |      |      |     |      |      | 17.84%  |
| <b>Total 1395 %</b>                                       | ----   | 51.70% | 15.73% | 47.50% | 70.88%  | 77.03%  | 75.65%  |      |      |      |     |      |      | 56.42%  |
| <b>Total 1394 %</b>                                       | ----   | 19.83% | 17.37% | 12.60% | 11.58%  | 18.66%  | 61.45%  |      |      |      |     |      |      | 23.58%  |

**Fuel Type & Consumption - Shahrivar 1395**





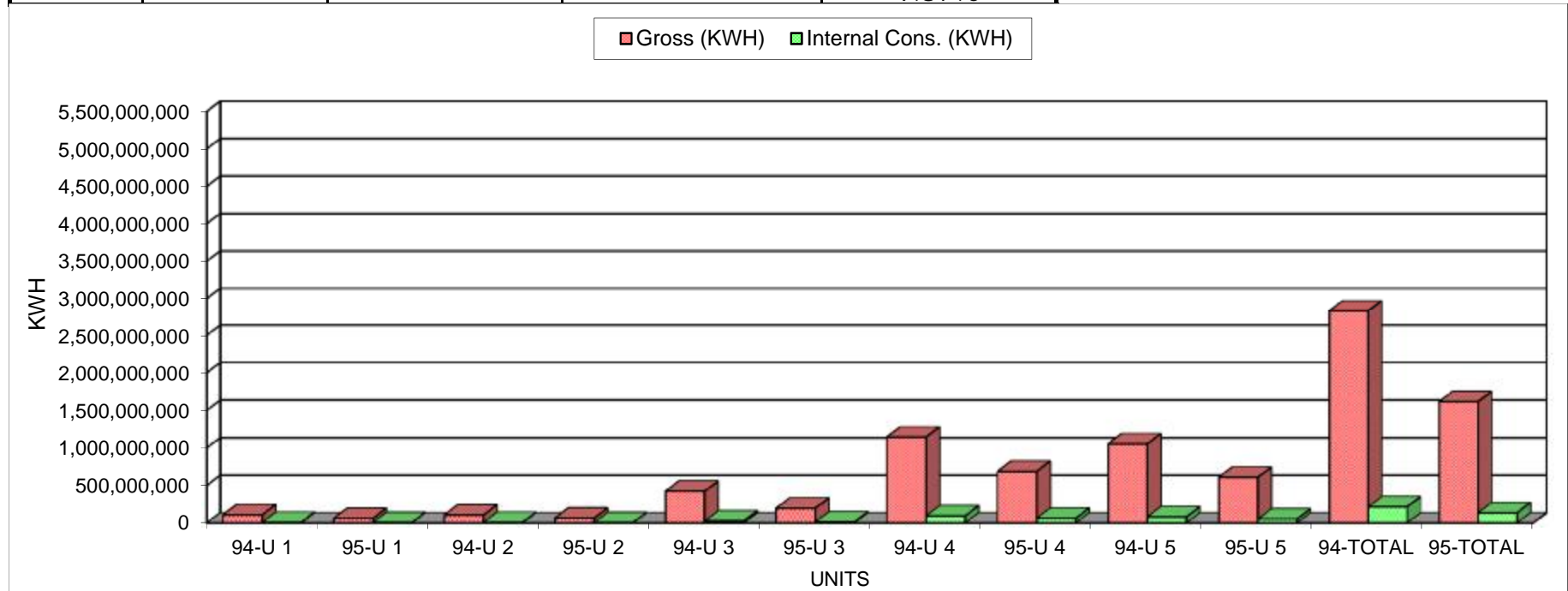
**Monthly Fuel Consumption - Delivered - Deviation - Store , Shahrivar 1395**

|                  | CONSUMPTION(This Month)                    |            | Consumption Deviation<br>Refrence<br>Gas Company-Counter<br>This month | Delivered<br>Refinery or Gas Company |            | Store      |            | CONSUMPTION(Till this Month)             |             | Consumption Deviation<br>Refrence<br>Gas Company-Counter<br>Till this month |
|------------------|--|------------|--|--------------------------------------|------------|------------|------------|--|-------------|---|
|                  | Unloading<br>Plant(Store) -<br>Gas Company | Counter    |  | Till this month                      | This Month | Last Month | This Month | Unloading<br>Plant(Store)<br>Gas Company | Counter     |   |
|                  |  |            |  |                                      |            |            |            |  |             |   |
| Fuel Oil (LIT)   | 0  | 0          | <u>0</u>   | 0                                    | 0          | 44,152,280 | 44,152,280 | 0  | 0           | <u>0</u>  |
| Light Oil (LIT)  | 0  | 0          | <u>0</u>   | 0                                    | 0          | 636,222    | 636,222    | 0  | 0           | <u>0</u>  |
| MISC Consumption |  | 0          |  |                                      |            |            |            |  |             |   |
| Natural Gas (M3) | 42,531,793                                 | 42,556,000 | <u>-24,207</u>   | 447,786,342                          | 42,531,793 | -----      | -----      | 447,786,342                              | 451,980,000 | <u>-4,193,659</u>   |

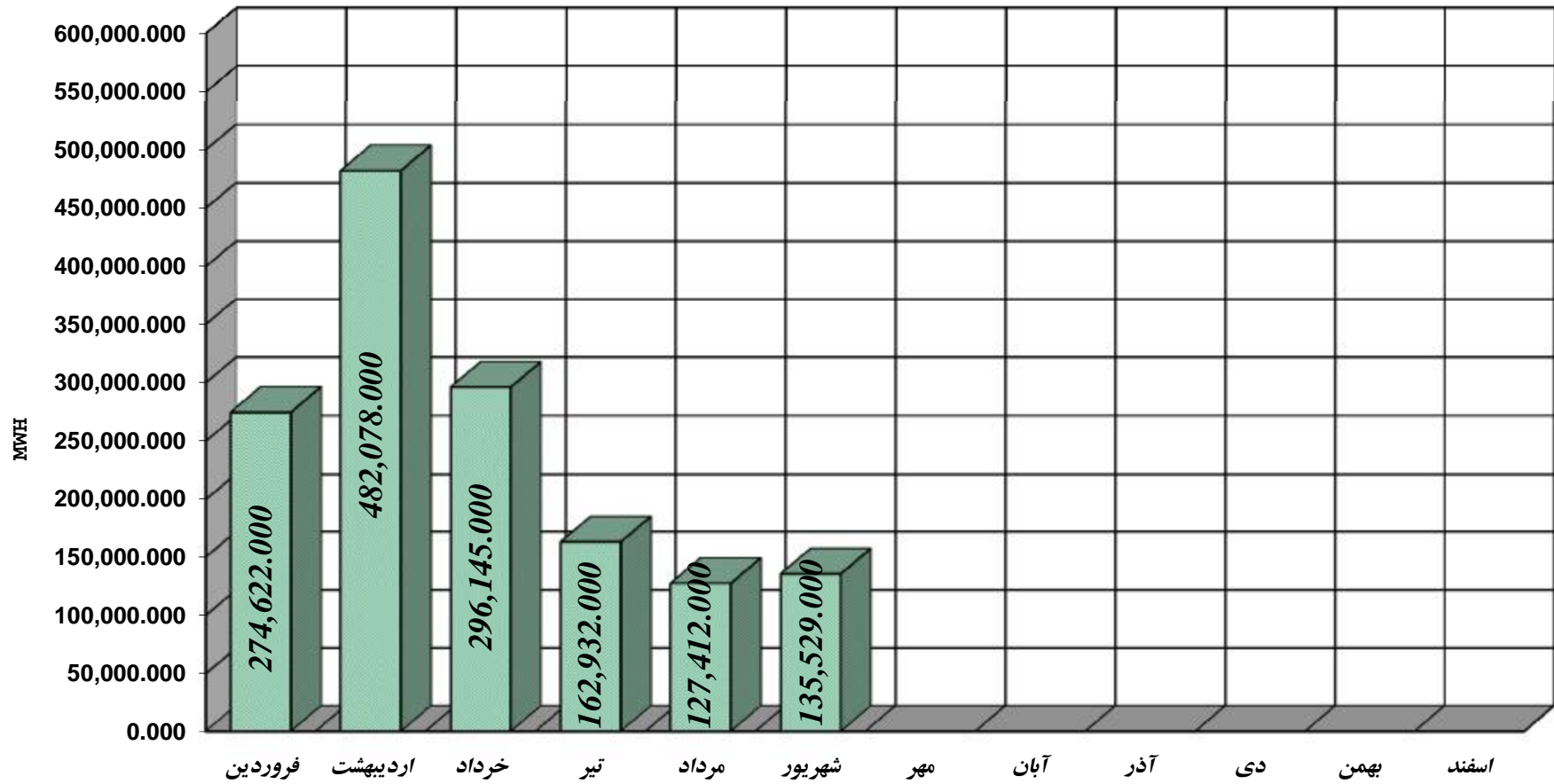
\* \* مازوت ورودی هم در دمای 60 درجه وهم در دمای طبیعی ثبت شده است \* \*

**GROSS PRODUCTION , INTERNAL CONS. COMPARISON 6 MONTH 94 - 95**

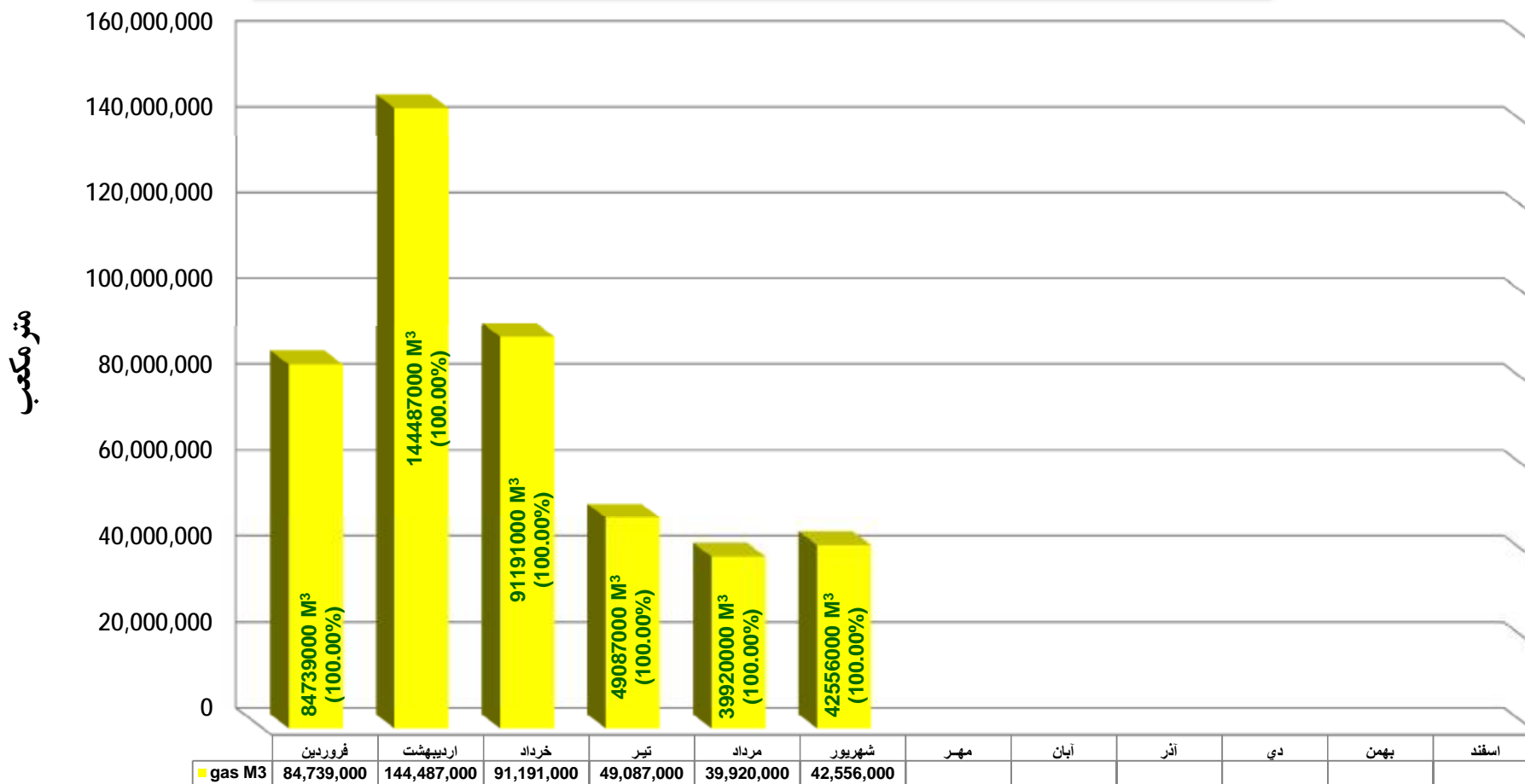
| Unit No.    | Year         | Gross (KWH) | Internal Cons. (KWH) | Internal Cons. (%) |
|-------------|--------------|-------------|----------------------|--------------------|
| 1           | 94-U 1       | 108386000   | 7103000              | 6.55%              |
|             | 95-U 1       | 58911000    | 4327000              | 7.34%              |
| 2           | 94-U 2       | 105535000   | 6670000              | 6.32%              |
|             | 95-U 2       | 64362000    | 3656000              | 5.68%              |
| 3           | 94-U 3       | 422770000   | 26107000             | 6.18%              |
|             | 95-U 3       | 196777000   | 12771000             | 6.49%              |
| 4           | 94-U 4       | 1142312000  | 93465000             | 8.18%              |
|             | 95-U 4       | 686502000   | 62303000             | 9.08%              |
| 5           | 94-U 5       | 1052421000  | 81357000             | 7.73%              |
|             | 95-U 5       | 608316000   | 52411000             | 8.62%              |
| TOTAL       | 94-TOTAL     | 2831424000  | 215180000            | 7.60%              |
| TOTAL       | 95-TOTAL     | 1614868000  | 136150000            | 8.43%              |
| Total Units | 94-Shahrivar | 238080000   | 21187270             | 8.90%              |
| Total Units | 95-Shahrivar | 150372000   | 14843000             | 9.87%              |



**Monthly Net Generation Comparison in year 1395**



Monthly Fuel Consumption Comparison in year 1395 ( According to E.P.P Counters)

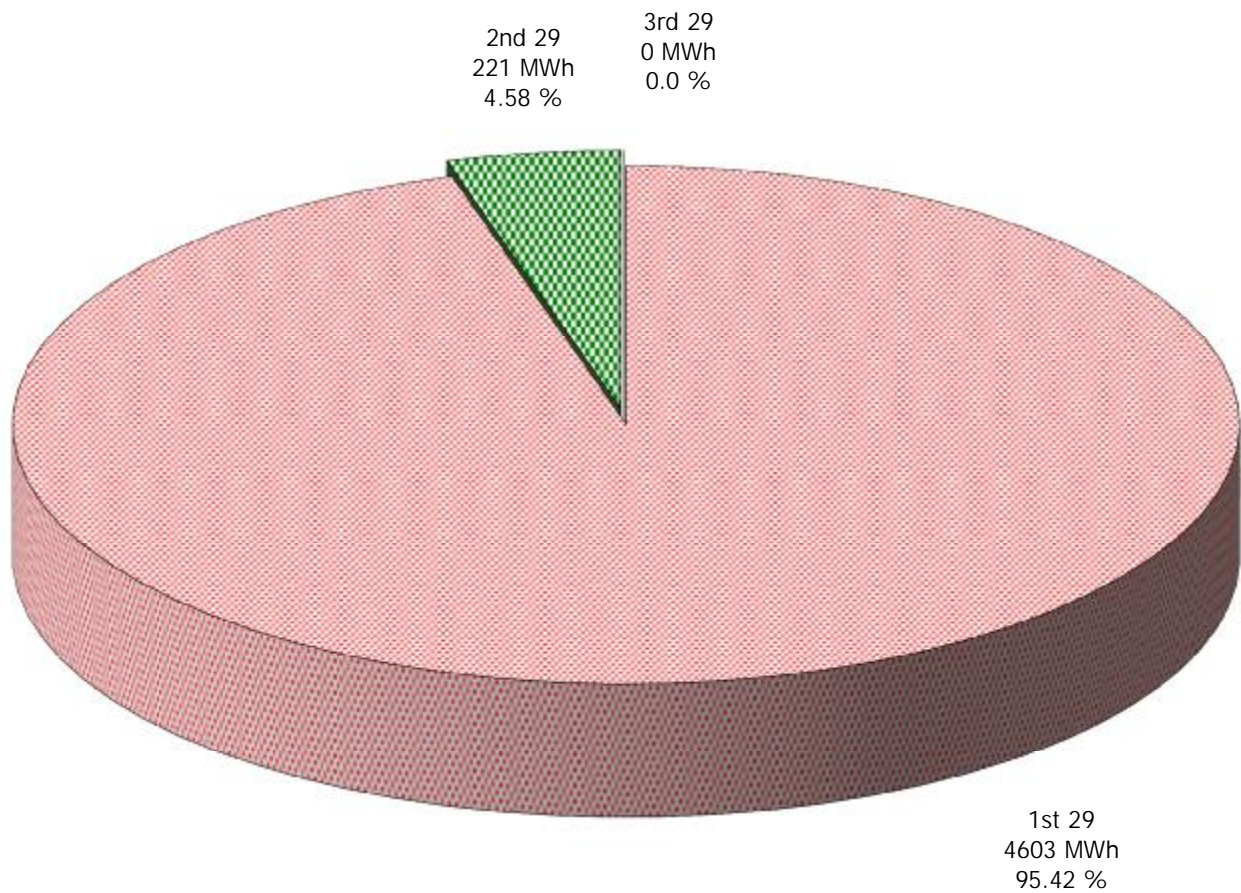


Esfahan Power Generation Management Co.  
Hesa Power Plant

**Total Units Information from First Synchronizing (1395/06/31)**

| <i>Units No.</i> | <i>Nom. Power (MW)</i> | <i>Net Power (MW)</i> | <i>First Synchronize Date</i> | <i>Geo. Code</i> | <i>Gen. Code</i> | <i>Gross Production (MWH)</i> | <i>Net Production (MWH)</i> | <i>Operation Period (H)</i> | <i>Op.from last Overhaul (H)</i> |
|------------------|------------------------|-----------------------|-------------------------------|------------------|------------------|-------------------------------|-----------------------------|-----------------------------|----------------------------------|
| 1                | 29                     | 23                    | 70/01/20                      | -----            | -----            | 352909.1                      | 303152.0                    | 19416                       | 1252                             |
| 2                | 29                     | 23                    | 68/04/15                      | -----            | -----            | 491968.8                      | 460628.4                    | 23966                       | 14999                            |
| 3                | 29                     | 23                    | 68/11/10                      | -----            | -----            | 225988.6                      | 208941.7                    | 12321                       | 7377                             |
| <b>Total</b>     | <b>87</b>              | <b>69</b>             | <b>-----</b>                  | <b>-----</b>     | <b>-----</b>     | <b>1070866.5</b>              | <b>972722.04</b>            | <b>-----</b>                | <b>-----</b>                     |

**Units Monthly Production Comparison - Shahrivar 1395**



Esfahan Power Generation Management Co.  
Hesa Power Plant

**Monthly Units Thermolectric Information - Shahrivar 1395**

| Unit<br>No.  | Nominal<br>Power<br>(MW) | Production      |                 | Fuel Consumption |                | Heat Rate<br>Kcal/Kwh | Operation<br>Period<br>H | Stop<br>Period<br>H | Succ. Start<br>No. | Load<br>Factor<br>% |
|--------------|--------------------------|-----------------|-----------------|------------------|----------------|-----------------------|--------------------------|---------------------|--------------------|---------------------|
|              |                          | Gross<br>(MWH)  | Net<br>(MWH)    | Gasoil<br>(Lit)  | Gas<br>(MC)    |                       |                          |                     |                    |                     |
| 1            | 23                       | 4603.000        | 4597.886        | 0                | 1710189        | 3175                  | 239                      | 505                 | 4                  | 83.7 %              |
| 2            | 23                       | 221.000         | 220.754         | 700              | 82630          | 3222                  | 12                       | 732                 | 3                  | 80.1 %              |
| 3            | 23                       | 0.000           | 0.000           | 0                | 0              | 0                     | 0                        | 744                 | 0                  | 0.0 %               |
| <b>TOTAL</b> | <b>69</b>                | <b>4824.000</b> | <b>4818.640</b> | <b>700</b>       | <b>1792819</b> | <b>3177</b>           | <b>251</b>               | <b>-----</b>        | <b>7</b>           | <b>83.6 %</b>       |



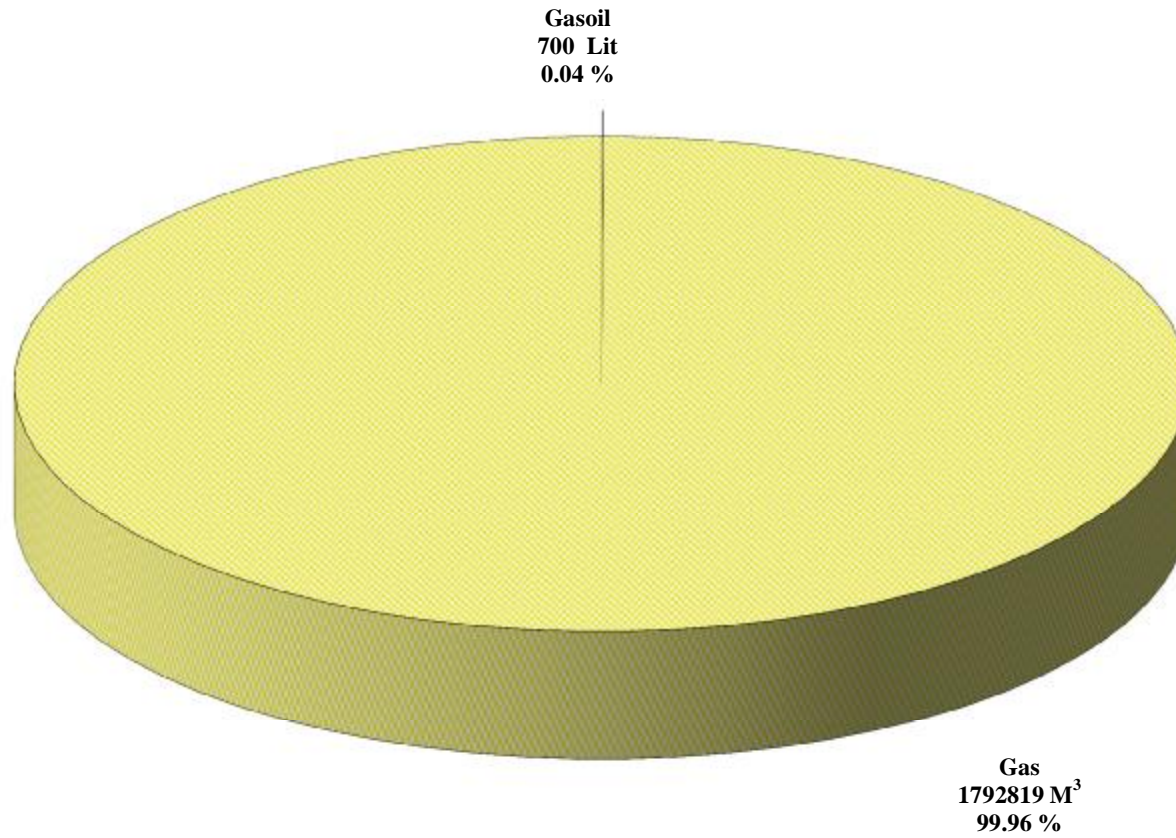


Esfahan Power Generation Management Co.  
Hesa Power Plant

**Units Annually Unavailability - 1395**

| <b>Units Trip Causes</b>                                  | <b>Plants</b> | <b>Far.</b> | <b>Ord.</b> | <b>Khor.</b> | <b>Tir</b> | <b>Mod.</b> | <b>Shr.</b> | <b>Meh.</b> | <b>Abn.</b> | <b>Azr.</b> | <b>Day</b> | <b>Bah.</b> | <b>Esf.</b> | <b>Average</b> |
|---|---------------|-------------|-------------|--------------|------------|-------------|-------------|-------------|-------------|-------------|------------|-------------|-------------|----------------|
| <b>Outage ( Internal ) %<br/>(FO-FA-FS-FP)<br/>(%)</b>    | 1             | 0.00%       | 0.00%       | 0.00%        | 72.91%     | 0.00%       | 0.00%       |             |             |             |            |             |             | 12.15%         |
|   | 2             | 0.00%       | 0.00%       | 0.00%        | 19.29%     | 0.00%       | 0.00%       |             |             |             |            |             |             | 3.21%          |
|   | 3             | 0.00%       | 0.00%       | 0.00%        | 0.00%      | 0.00%       | 0.00%       |             |             |             |            |             |             | 0.00%          |
| <b>Outage ( External ) %<br/>(FG-FQ-FD-FC-FW)<br/>(%)</b> | 1             | 0.00%       | 0.00%       | 0.00%        | 0.00%      | 0.00%       | 0.00%       |             |             |             |            |             |             | 0.00%          |
|   | 2             | 0.00%       | 0.00%       | 0.00%        | 0.00%      | 0.00%       | 0.00%       |             |             |             |            |             |             | 0.00%          |
|   | 3             | 0.00%       | 0.00%       | 0.00%        | 0.00%      | 0.00%       | 0.00%       |             |             |             |            |             |             | 0.00%          |
| <b>Overhaul %(PO)</b>                                     | 1             | 0.00%       | 0.00%       | 0.00%        | 0.00%      | 0.00%       | 0.00%       |             |             |             |            |             |             | 0.00%          |
|   | 2             | 0.00%       | 0.00%       | 0.00%        | 0.00%      | 0.00%       | 0.00%       |             |             |             |            |             |             | 0.00%          |
|   | 3             | 0.00%       | 0.00%       | 0.00%        | 0.00%      | 0.00%       | 0.00%       |             |             |             |            |             |             | 0.00%          |
| <b>Periodic Maint. %(PM)</b>                              | 1             | 0.00%       | 0.00%       | 0.00%        | 0.00%      | 0.00%       | 0.00%       |             |             |             |            |             |             | 0.00%          |
|   | 2             | 100.00%     | 100.00%     | 48.39%       | 0.00%      | 0.00%       | 0.00%       |             |             |             |            |             |             | 41.40%         |
|   | 3             | 100.00%     | 100.00%     | 100.00%      | 100.00%    | 100.00%     | 100.00%     |             |             |             |            |             |             | 100.00%        |
| <b>Limit. Internal<br/>(LF1-LF2-LA-LP)<br/>(%)</b>        | 1             | 0.00%       | 0.00%       | 0.00%        | 0.00%      | 0.00%       | 0.00%       |             |             |             |            |             |             | 0.00%          |
|   | 2             | 0.00%       | 0.00%       | 0.00%        | 0.00%      | 0.00%       | 0.00%       |             |             |             |            |             |             | 0.00%          |
|   | 3             | 0.00%       | 0.00%       | 0.00%        | 0.00%      | 0.00%       | 0.00%       |             |             |             |            |             |             | 0.00%          |
| <b>Limit. External<br/>(SR-LQ-LG-LW-LD-LC)<br/>(%)</b>    | 1             | 99.30%      | 97.35%      | 62.95%       | 3.08%      | 50.27%      | 73.10%      |             |             |             |            |             |             | 64.34%         |
|   | 2             | 0.00%       | 0.00%       | 22.30%       | 12.27%     | 30.18%      | 98.71%      |             |             |             |            |             |             | 27.24%         |
|   | 3             | 0.00%       | 0.00%       | 0.00%        | 0.00%      | 0.00%       | 0.00%       |             |             |             |            |             |             | 0.00%          |
| <b>Total 1395 %</b>                                       | ----          | 99.77%      | 99.12%      | 77.88%       | 69.18%     | 60.15%      | 90.60%      |             |             |             |            |             |             | 82.78%         |
| <b>Total 1394%</b>  | ----          | 100.00%     | 100.00%     | 100.00%      | 100.00%    | 100.00%     | 100.00%     |             |             |             |            |             |             | 100.00%        |

**Fuel Type & Consumption - Shahrivar 1395**

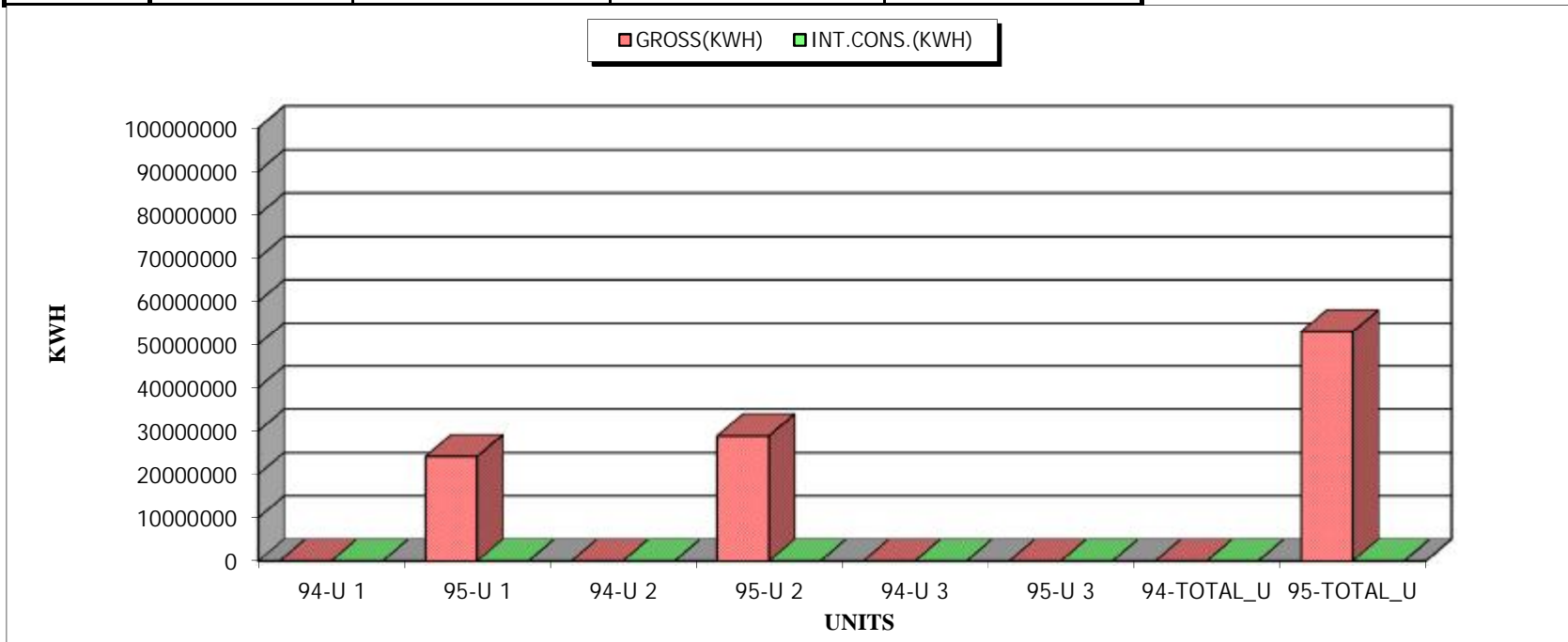


**Monthly Fuel Consumption - Delivered - Deviation - Store , Shahrivar 1395**

|                  | CONSUMPTION (This Month)                   |           | Consumption Deviation<br>Refrence<br>Gas Company - Counter<br>This month | Delivered<br>Refinery or Gas Company |            | Store      |            | CONSUMPTION (Till this year)               |            | Consumption Deviation<br>Refrence<br>Gas Company - Counter<br>Till this month |
|------------------|--|-----------|--|--------------------------------------|------------|------------|------------|--|------------|---|
|                  | Unloading<br>Plant(Store) -<br>Gas Company | Counter   |  | Till this month                      | This Month | Last Month | This Month | Unloading<br>Plant(Store) -<br>Gas Company | Counter    |   |
|                  | Light Oil (LIT)                            | 700       | 700  | <u>0</u>                             | 0          | 0          | 3,588,882  | 3,588,182                                  | 987        | 1,082   |
| MISC Consumption |  | 0         |  |                                      |            |            |            |  |            |   |
| Natural Gas (M3) | 1,792,819                                  | 1,792,819 | <u>0</u>   | 19,571,554                           | 1,792,819  | -----      | -----      | 19,571,554                                 | 19,571,554 | <u>0</u>  |

**GROSS PRODUCTION , INTERNAL CONS. COMPARISON 6 MONTH 94 - 95**

| Unit No. | Year       | Gross (KWH) | Internal Cons. (KWH) | Internal Cons. (%) |
|----------|------------|-------------|----------------------|--------------------|
| 1        | 94-U 1     | 0           | 0                    | 0.00%              |
|          | 95-U 1     | 24134000    | 34231                | 0.14%              |
| 2        | 94-U 2     | 0           | 19760                | 0.00%              |
|          | 95-U 2     | 28896000    | 17739                | 0.06%              |
| 3        | 94-U 3     | 0           | 0                    | 0.00%              |
|          | 95-U 3     | 0           | 0                    | 0.00%              |
| TOTAL    | 94-TOTAL_U | 0           | 19760                | 0.00%              |
| TOTAL    | 95-TOTAL_U | 53030000    | 51970                | 0.10%              |



***DESCRIPTION OF ABBREVIATIONS***

| <b>Code</b> | <b>DESCRIPTION</b>         |
|-------------|----------------------------|
| <b>S</b>    | <b>STEAM TURBINE</b>       |
| <b>G</b>    | <b>GAS TURBINE</b>         |
| <b>TPP</b>  | <b>THERMAL POWER PLANT</b> |
| <b>GPP</b>  | <b>GAS POWER PLANT</b>     |
| <b>EST</b>  | <b>ESFAHAN POWER PLANT</b> |
| <b>HSG</b>  | <b>HESA POWER PLANT</b>    |