

# POTENTIAL MARKET CONSIDERATION

- Petrochemical industry on olefin base is prospective for investors especially in their upstream and intermediate industries.
- Intermediate and downstream Industries of petrochemical in Indonesia such as plastic products, pharmacy, detergent, and others are numerous. These mostly need ethylene, propylene, ethylene glycol, and polyethylene as raw material.
- Domestic market potential for upstream olefin is still widely open. Projected demand of olefin in 2010, amounted to :
  - Ethylene : 400.000 ton/year;
  - Propylene : 203.000 ton/year
  - Polyethylene : 190.000 ton/year
  - Ethylene Glycol : 403.000 ton/year
- Potential export is also widely open
- Petrochemical Industry will be granted fiscal facility under Government Regulation No. 1 year 2007

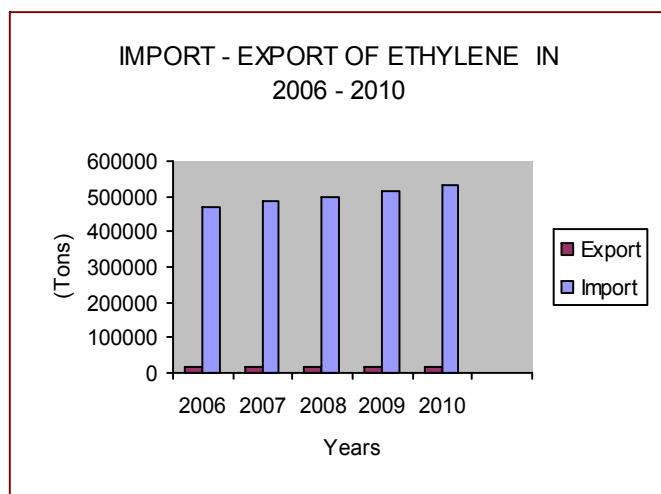
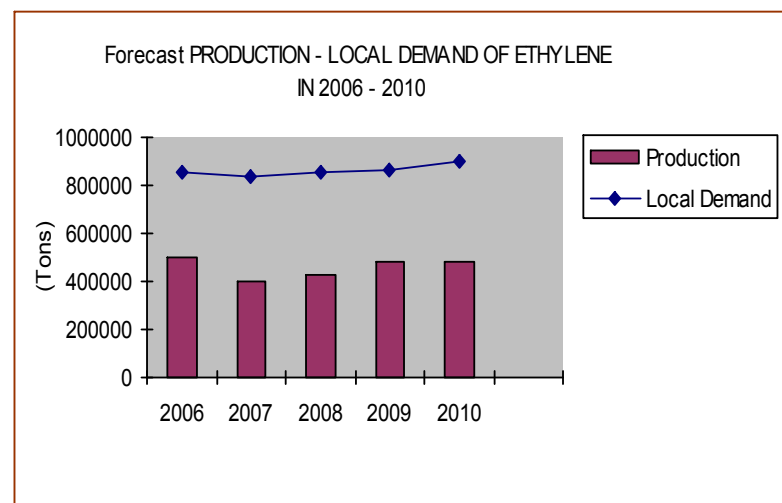
*See detail data*

# DEVELOPMENT OF PETROCHEMICAL INDUSTRY IN OLEFIN BASIS

## 1. ETHYLENE

Projected demand of ethylene in 2010 is amounted to 896.947 ton which could not be fulfilled yet domestically. Domestic production is only 485.000 ton. The rest should be imported.

Forecast	2006	2007	2008	2009	2010
Production	499.320	397.580	428.288	478.520	485.000
Local Demand	855.925	836.812	852.533	867.340	896.947
Balance +/-	-356.606	-439.232	-424.245	-388.820	-411.947

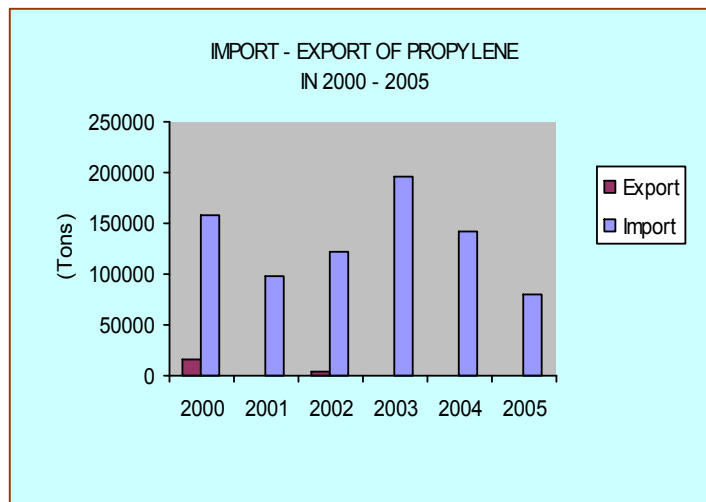
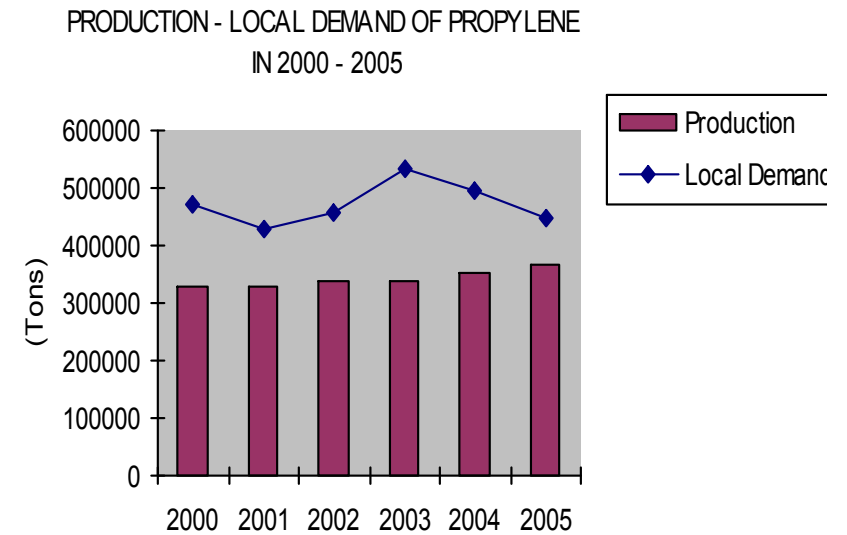


Forecast	2006	2007	2008	2009	2010
Export	15.717	15.874	16.033	16.193	16.355
Import	470.987	485.116	499.670	514.660	530.100
Balance +/-	-455.270	-469.252	-483.637	-498.467	-513.745

## 2. PROPYLENE

Domestic demand of propylene is higher than domestic production.

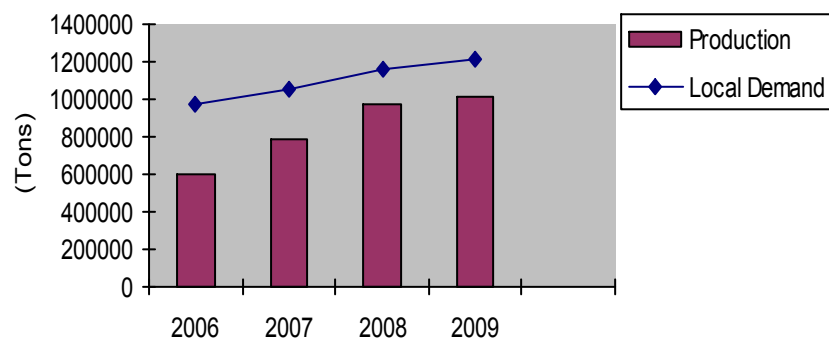
(Tons)	2000	2001	2002	2003	2004	2005
Production	327.963	327.654	337.000	340.000	352.240	364.921
Local Demand	470.616	426.491	456.574	535.264	494.515	445.622
Balance +/-	-142.653	-98.837	-119.574	-195.264	-142.275	-80.701



(Tons)	2000	2001	2002	2003	2004	2005
Export	15.100	1	3.200	0	306	0
Import	157.753	98.838	122.774	195.264	142.581	80.701
Balance +/-	-142.653	-98.837	-119.574	-195.264	-142.275	-80.701

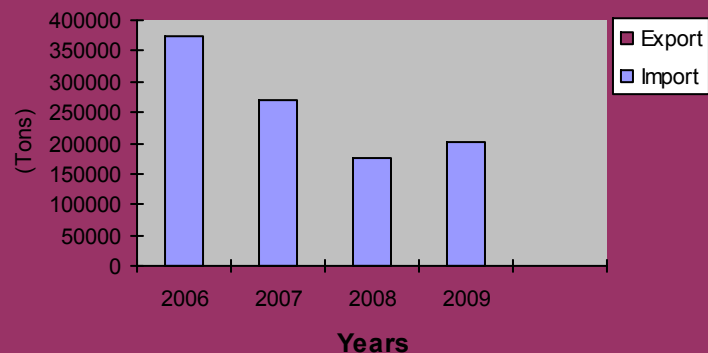
Projected demand of propylene until 2009 is amounted to 1.213.000 ton, which is supplied locally 1.010.000 ton. The rest amounted to 203.000 ton should be fulfilled from import.

Forecast PRODUCTION - LOCAL DEMAND OF PROPYLENE  
IN 2006 -2010



	2006	2007	2008	2009
Production	598.000	788.000	978.000	1.010.000
Local Demand	972.000	1.059.000	1.155.000	1.213.000
Balance +/-	-374.000	-271.000	-177.000	-203.000

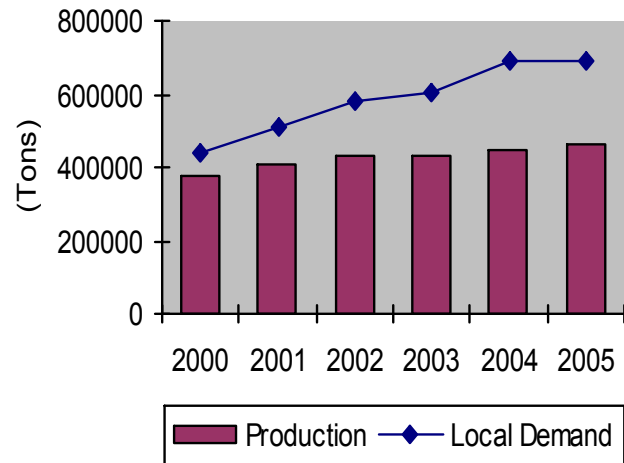
Forecast IMPORT - EXPORT OF PROPYLENE  
IN 2006 -2010



	2006	2007	2008	2009
Export	0	0	0	0
Import	374.000	271.000	177.000	203.000
Balance +/-	-374.000	-271.000	-177.000	-203.000

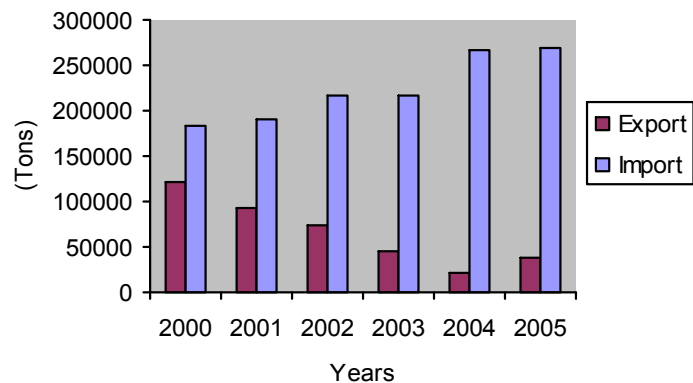
### 3. POLYETHYLENE (PE)

PRODUCTION - LOCAL DEMAND OF POLYETHYLENE  
IN 2000 - 2005



(Tons)	2000	2001	2002	2003	2004	2005
Production	379.664	408.000	435.000	430.000	445.050	460.627
Local Demand	471.708	505.990	578.630	601.279	690.908	691.270
Balance +/-	-62.064	-97.990	-143.630	-171.279	-245.858	-230.643

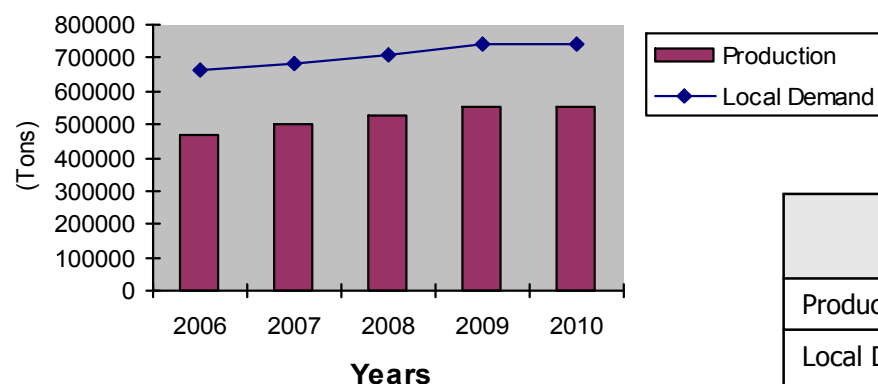
IMPORT - EXPORT OF POLYETHYLENE  
IN 2000 - 2005



(Tons)	2000	2001	2002	2003	2004	2005
Export	121.427	92.810	72.636	45.749	21.935	37.336
Import	183.491	190.800	216.266	217.028	267.793	267.979
Balance +/-	-62.064	-97.990	-143.630	-171.279	-245.858	-23.643

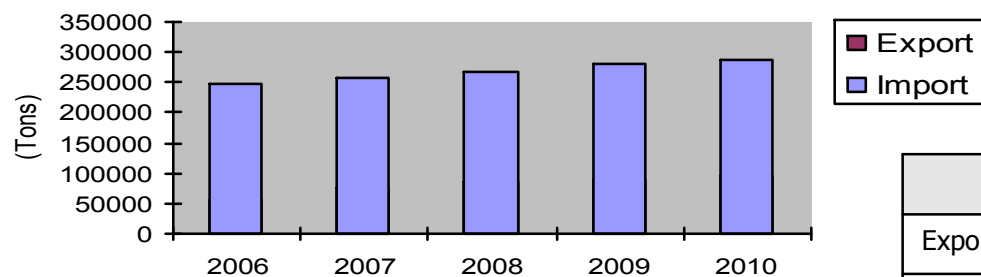
Projected demand of polyethylene in 2010 is amounted to 741.814 ton which could not be fulfilled yet domestically. Domestic production is only 550.000 ton. The rest should be imported.

Forecast PRODUCTION - LOCAL DEMAND OF POLYETHYLENE  
IN 2006 -2010



	2006	2007	2008	2009	2010
Production	470.000	500.000	525.000	550.000	550.000
Local Demand	660.979	682.411	709.015	738.762	741.814
Balance +/-	-190.979	-182.411	-184.015	-188.762	-191.814

Forecast IMPORT - EXPORT OF POLYETHYLENE  
IN 2006 -2010

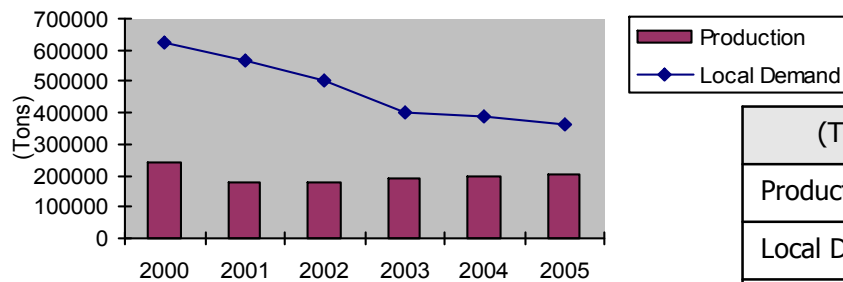


	2006	2007	2008	2009	2010
Export	48	53	53	53	53
Import	344.569	365.243	387.158	410.387	435.011
Balance +/-	-344.521	-365.190	-387.105	-410.334	-434.958

## 4. ETHYLENE GLYCOL

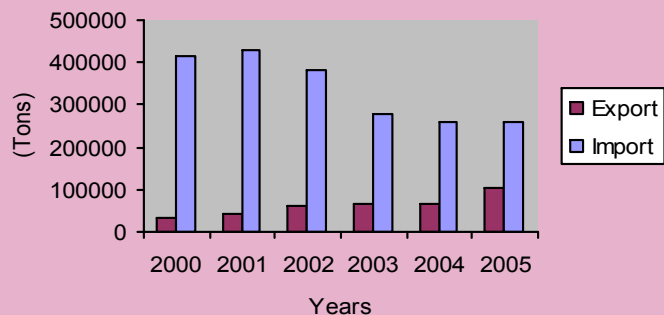
Domestic demand of Ethylene Glycol is higher than domestic production.

PRODUCTION - LOCAL DEMAND OF ETHYLENE GLYCOL  
IN 2000 - 2005



(Tons)	2000	2001	2002	2003	2004	2005
Production	239.600	179.450	180.050	190.129	195.000	201.825
Local Demand	625.196	568.579	504.061	401.253	386.272	360.049
Balance +/-	-385.596	-389.129	-324.011	-211.124	-191.272	-158.224

IMPORT - EXPORT OF ETHYLENE GLYCOL  
IN 2000 - 2005

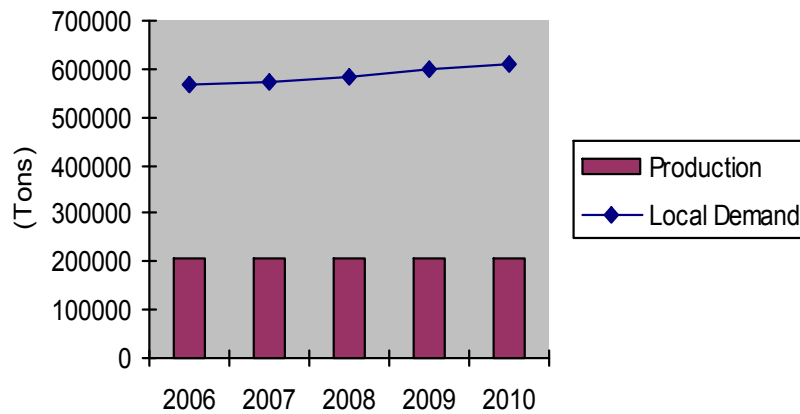


(Tons)	2000	2001	2002	2003	2004	2005
Export	31.122	41.592	60.272	65.499	66.065	103.272
Import	416.718	430.721	384.283	276.623	257.337	261.496
Balance +/-	-385.596	-389.129	-324.011	-211.124	-191.272	-158.224

Source : Ministry of Industry, 2006 edited

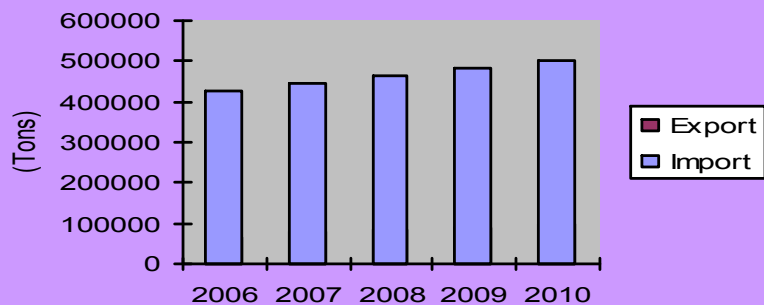
Projected demand of Ethylene glycol in 2010 is amounted to 612.361 ton which could not be fulfilled yet domestically. Domestic production is only 209.000 ton. The rest should be imported.

Forecast PRODUCTION - LOCAL DEMAND OF ETHYLENE GLYCOL IN 2006 -2010



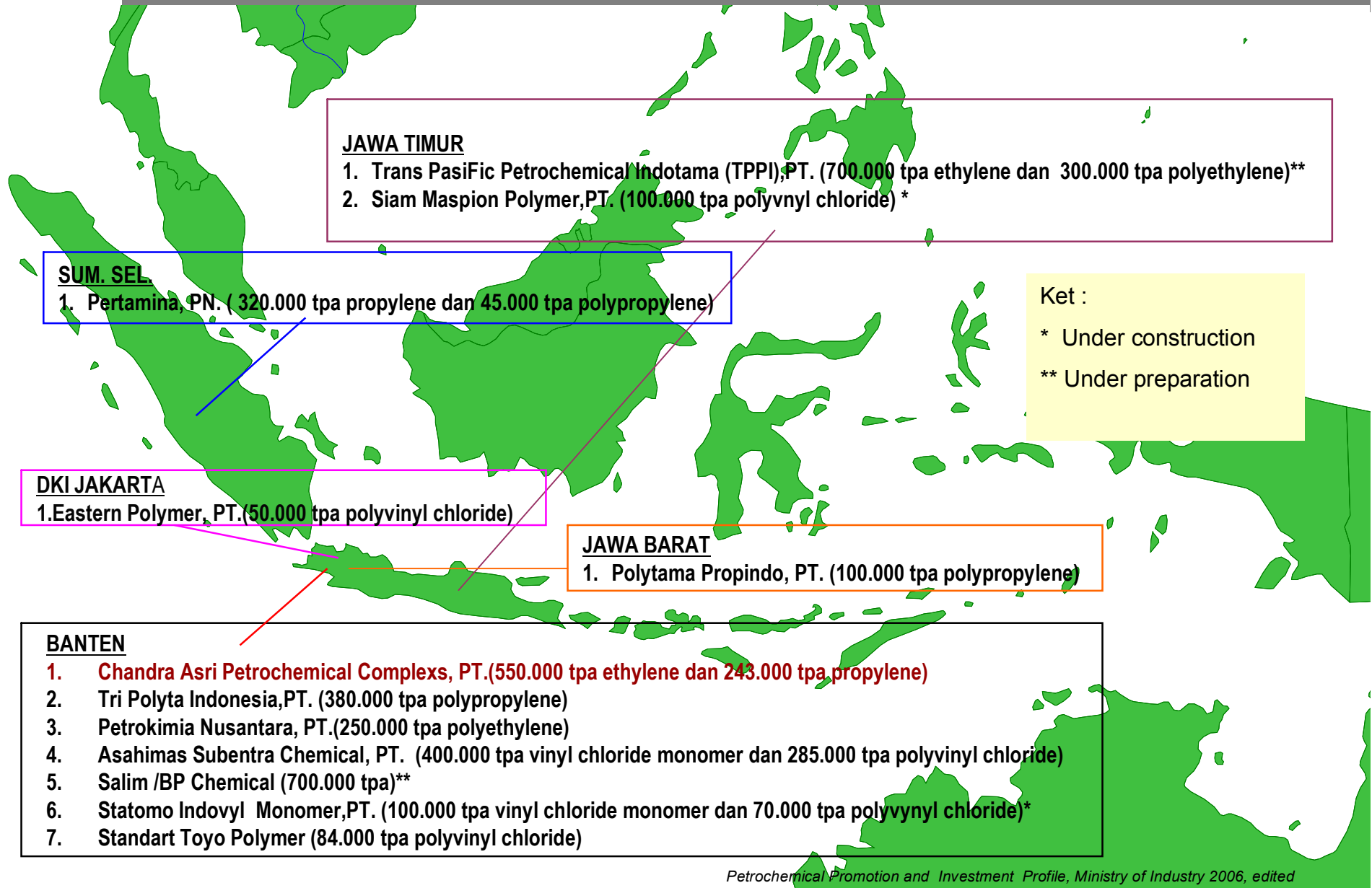
	2006	2007	2008	2009	2010
Production	205.500	207.765	208.000	209.000	209.000
Local Demand	566.075	573.394	585.882	599.459	612.361
Balance +/-	-360.575	-365.629	-377.882	-390.459	-403.361

Forecast IMPORT - EXPORT OF POLYETHYLENE IN 2006 -2010

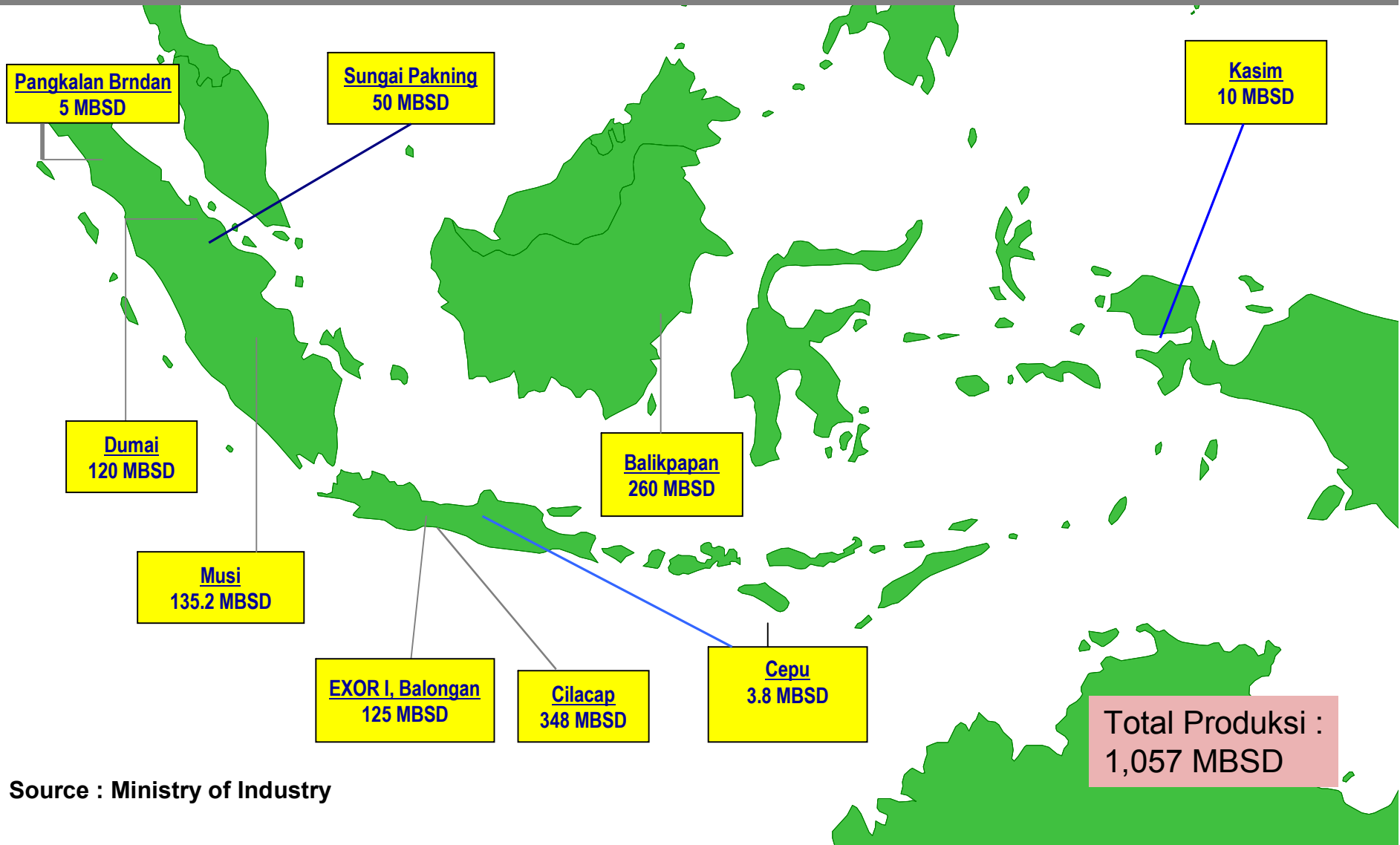


	2006	2007	2008	2009	2010
Export	67.036	79.086	84.622	90.545	96.883
Import	427.611	444.715	462.504	481.005	500.244
Balance +/-	-360.575	-365.629	-377.882	-390.459	-403.361

# MAP OF OLEFIN INDUSTRY IN INDONESIA



# Raw Material : Oil Refinery In Indonesia



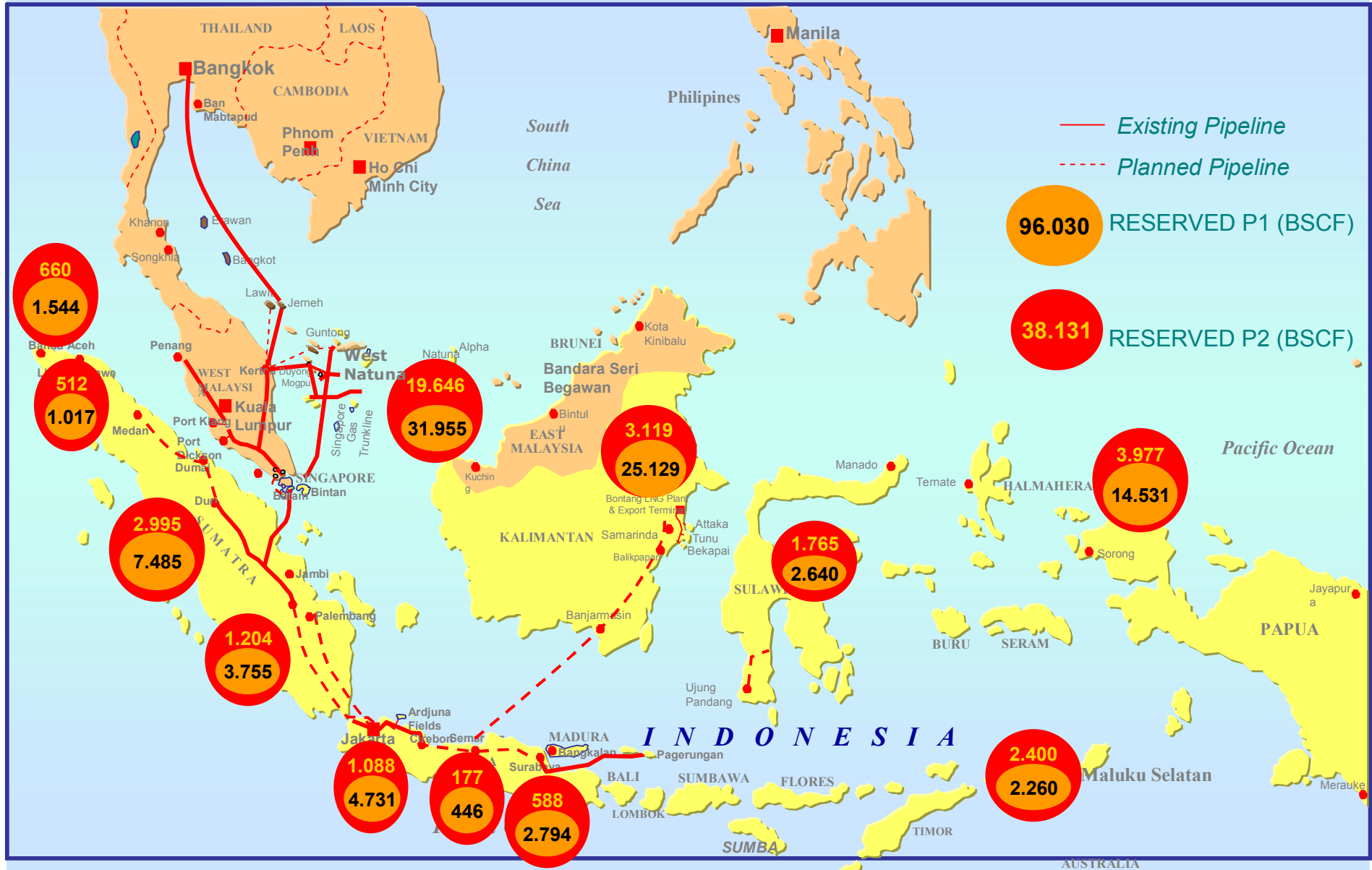
Source : Ministry of Industry

# NATURAL GAS REFINERY UNIT IN INDONESIA



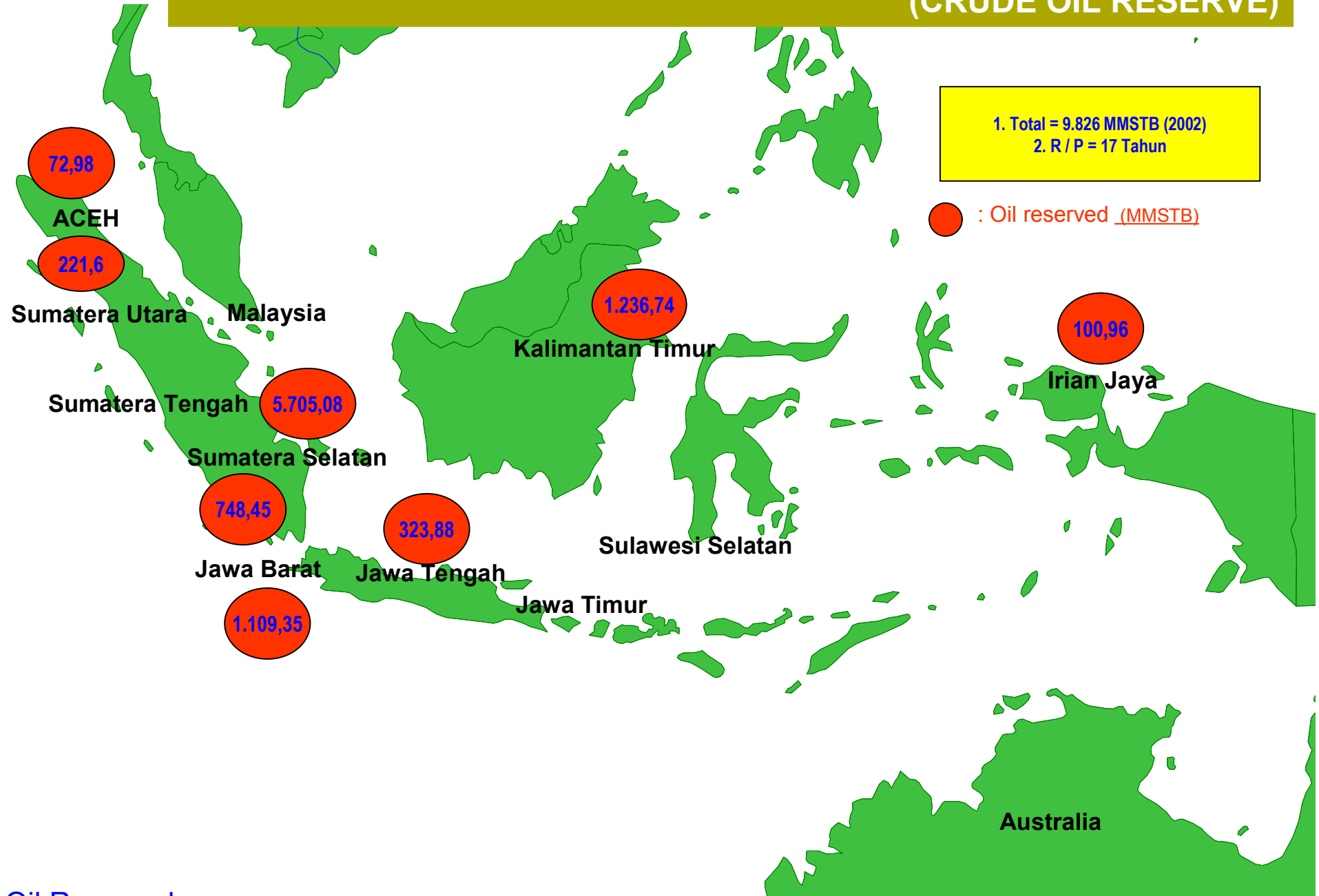
Source : BP Migas

# POTENTIAL RAW MATERIAL OF PETROCHEMICAL INDUSTRY



Reserved and Infrastructure of National Natural Gas Source : Ministry of Energy Mineral Resources

# POTENTIAL RAW MATERIAL OF PETROCHEMICAL INDUSTRY (CRUDE OIL RESERVE)



Oil Reserved

Source : BP Migas

# POTENTIAL LABOR

- The Government of Indonesia guarantees the availability of skilled labor on petrochemical industry. It is supported by 6 well-known universities in Indonesia such as University of Indonesia, in Province of DKI Jakarta, University of Diponegoro in di Province of Central Java, University of Gajah Mada in Province of Yogyakarta, Intitute Technology of Bandung in Province of West Java, Institute Technology of Surabaya in Province of East Java, University of Sumatera Utara in Province of North Sumatera, etc which is amounted to + 1.000 per year;
- The other university and vocational training centre for petrochemical industry is also available amounted to 2.000 people per year.