

*PART I*

**RATIONALIZING  
FERTILISER SUBSIDIES**

# RATIONALISING FERTILIZER SUBSIDIES

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## Executive Summary

### Background and Objectives

1. Fertilizer subsidies have grown dramatically and continue to increase rapidly. The green revolution technology is now widely accepted and the need to subsidize fertilizers to induce farmers to increase their usage has gone down.
2. The Retention Price Scheme (RPS) has led to the development of a large domestic industry and near self-sufficiency. However, the unit wise RPS is a cost plus scheme. It results in high cost fertilizers, excess payments to industry and provides no incentives to be cost efficient. Moreover, it is extremely difficult, if not impossible, to administer it without these disadvantages.
3. The fertilizer policy needs to be reformed. The goal of new policy should be to eventually bring fertilizer prices charged to farmers to the level of import parity price. It should protect small farmers' real incomes, should not lead to a slump in food production and promote a balanced use of N, P and K. At the same time, the RPS needs to be dismantled and replaced by an easily enforceable system that provides incentives to manufacturers to be cost efficient, and ensures a desired level of self-sufficiency with minimal support from the government.
4. A sudden increase in farm-gate price of urea to import parity price, without increasing procurement prices, could lead to a fall of 13.5 million tonnes of foodgrains production. This is thus, not a feasible option.

### *Protecting Small farmers*

5. If procurement prices are raised along with farm-gate prices of fertilizers, the fall would be much smaller. However, small and marginal farmers for whom self consumption is a large part of their output, would suffer a loss in their real incomes. They should be protected. Two possible ways are:

- (a) Introduction of a dual price scheme under which all cultivator households are given 120 Kgs. of fertilizers at subsidized prices and
- (b) Expansion of Employment Guarantee Scheme and rural works programmes to provide additional incomes to small farmers. If such rural programmes are directed towards improvement of land and development of minor irrigation schemes, they will in addition to providing wage income, increase productivity of land and income to farmers even when fertilizer prices are increased.

## **From RPS to Competitive Self-reliance**

### ***Urea***

7. A complete decontrol of producer price for urea would have been possible, were all our plants based on natural gas as feedstock. Unfortunately, only 56 percent of domestic capacity is gas based, 22 percent naphtha based, 9 percent fuel oil based and 12 percent is mixed feedstock based mostly naphtha and natural gas.

8. A sudden freeing of the urea industry could lead to most naphtha based units having to close down, as even their short run variable costs would be higher than the import price. The resultant surge in the demand for imports would push up import prices to levels which would lead to much higher quantum of subsidy than now, if the demand is to be maintained at 21 million tonnes of urea.

9. Since availability of natural gas is limited, a good proportion of the production has to be based on other feedstock if a certain level of self-sufficiency is to be maintained. These plants would have to be compensated for their higher cost of feedstock.

10. The best possible alternative at present is imported liquefied natural gas (LNG).

11. In the circumstances, the Commission recommends the dismantling of the control system in a phased manner, leading at the commencement of fourth stage, to a decontrolled fertilizer industry which can compete with import albeit with a small level of protection and a feedstock cost differential compensation to naphtha/LNG based units to ensure self-sufficiency. The scheme envisaged is in the spirit of the recommendations of the HPRC. The transition however has to be gradual.

12. The transition begins with the discontinuation of the RPS with effect from February 1, 2001, and introduction of a group-wise concession scheme. The number of groups is reduced from five to two by April 1, 2006. At this stage all units except those that are based on naphtha/LNG would be viable at a price of about Rs. 7000 per tonne of urea. For naphtha/LNG based units a Feedstock Differential Cost Reimbursement (FDCR) of Rs. 1900 per tonne of urea will be given. The details of the various stages are as follows:

- (i) In the first phase beginning February 1, 2001, the following will be done:
  - (a) The existing units will be grouped into 5 categories – pre-1992 gas based units, post 1992 gas based units, naphtha based units, FO/LSHS based units and mixed feedstock units. The individual retention price scheme will be scrapped and in its place a Urea Concession Scheme with a fixed amount of concession for each of these groups will be introduced. At the same time, plants would be free to get feed stock from wherever they want including imports.

- (b) The distribution control mechanism will be done away with.
  - (c) The maximum retail price arrangement will be continued, the concessions for each group being so calibrated as to enable the units to sell at the stipulated maximum retail price.
  - (d) Having regard to the large fluctuations in the import prices of feedstocks, it will be necessary to redetermine the concession to these groups of units every three months with reference to the prevailing import prices. When there is a reduction in the import parity prices of these feedstocks, the concession payable to the units would go down. It may be noted that this, however, is done only group-wise and not plant-wise. Whenever there is an increase in the import parity prices of these feedstocks, the additional costs should be passed on to the consumers through a suitable increase in the maximum retail price so that the total amount payable by way of concessions does not go up significantly. The revision in issue price to farmers however, should be done every season rather than every three months.
- (ii). In the second stage, beginning 1<sup>st</sup> April 2002, the concessions are reduced to reflect the possibility of reasonable improvement in feedstock usage efficiencies and reduction in capital related charges.
  - (iii). The third phase will begin on 1<sup>st</sup> April 2005 and reflects the feasibility of all non gas based plants to modernize and switch-over to LNG. For plants which do not switch over to LNG as feedstock only the level of concession that the unit would have been entitled to if it had switched over to LNG would be allowed.
  - (iv). The fourth phase begins on 1.4.2005 when the industry is decontrolled. The Commission recommends a 7 % increase in the price of urea in real terms every year from 1.4.2001. This way the open market price will reach Rs. 6903 by 1.4.2006, a level at which the industry can be freed from all controls and be required to compete with imports, with variable levy ensuring availability of such imports at the farm-gate at Rs. 7000 per tonne of urea. While no concessions will be necessary from this date onwards for gas based, FO/LSHS and mixed feed stock plants, existing naphtha plants converting to LNG as also new plants and substantial additions to existing plants will be entitled to a feedstock differential with that for LNG plants serving as a ceiling.

13. The schedule of concessions are shown in the Table 1:

**Table 1 : Schedule of concessions**

Feedstock	Ist stage concession (Rs./MT) Based on existing RPS and domestic Price of Inputs		IIInd Stage Net concession 1.2.2001 to 31.3.2002	IIIrd Stage 1.4.2002 to 31.3.2005  (Rs./MT)	IV th stage 1.4.2005 to 31.3.2006 from 1.4.2006	
	1	2	3	4	5	6
<b>Natural Gas</b>						
Pre 1992	1300	0	1300	1050	800	0
Post 1992	2900	0	2900	2450	2000	0
Naphtha	8400	1900	6500	5800	3900	1900
FO/LSHS	6400	3250	3150	2200	2200	0
Mixed feedstock	4000	600	3400	3000	2450	0

**New Plants :** For non gas based new plants or substantial additions to existing plants would be given appropriate feedstock differential subject to the feedstock differential for LNG plants acting as the ceiling.

**Notes:**

- (a) The concessions in column (1) are so determined that along with the net receipt of Rs.4000 from the farm-gate price of Rs.4600, the concession gives nearly the weighted average retention price to each group.
- (b) Column (3) shows the savings that can result in stage I, if feedstocks are at import parity prices. Freeing of imports will ensure that plants get feedstock at such prices by February 1,2001.
- (c) The reduction in column (4) compared to column (3) reflects change in feedstock use efficiency in stage II. Modest achievable targets have been assumed and plants are expected to attain them by 31<sup>st</sup> March, 2002.
- (d) Column (5) reflects the concession in the third stage, incorporating the further reduction on account of non gas based units switching over to LNG as feedstock.
- (e) Column (6) reflects the concession, by way of feedstock differential only in the fourth stage commencing 1.4.2006 when the industry is decontrolled and the imports are made available at Rs.7000 per tonne at the farmgate.
- (f) In all the three stages the final concession levels, as determined also take into account the progressive reduction in capital recovery charges.

- (g) The Commission has recommended a price increase of 7 % in real terms per annum from 1.4.2001, reaching Rs.7000 on 1.4.2006. To the extent of price increase in earlier years, the concession indicated in columns 3,4 and 5 would stand reduced.

14. The schedule of subsidy outlay under various stages is given in Table 2.

**Table 2 : Urea subsidy outlay in different phases**

	(Rs.Crores/year)				
	2000-01	2001-02	2002-05	2005-06	Apr.1,2006 onwards
<b>a) No increase in Issue price</b>					
Farm-gate price - Rs./mt of urea	4,600	4,600	4,600	4,600	4,600
<b>Concession to industry</b>	9,155	7,204	6,159	4,656	5,837
<b>b) Increase in issue price @ 7 % p.a.</b>					
Farm-gate price - Rs./mt of urea	4,600	4,922	5,267 to 6030	6,452	7,000
<b>Concession to industry (net)</b>	9,155	6,556	4,817 to 3,280	927	1,004
<b>c) Cost of coupon system :</b>					
Coupons to 105 million farmers		270	560	1,556	2,016
At 80 Kgs. of urea per family to be supplied At Rs.4,600 per Mt	-		to 1,201		

#### **Phosphatic and Potassic Fertilizers:**

15. The farm-gate prices of nitrogenous, phosphatic and potassic fertilizers should be set to promote a desired balance of fertilizer use. In the circumstances the ERC will only suggest that once urea price is re-determined every six months, the prices of potassic and phosphatic fertilizers should be suitably adjusted, as advised by the Ministry of Agriculture to ensure the desired NPK balance. It will be useful if government could announce in advance the formula to be adopted for fixing the prices of P & K fertilizers with reference to a given urea price.

16. Phosphatic fertilizers are already decontrolled and operated with a concession scheme. With one more unit commissioned last year for the manufacture of 1.5 million tonnes of DAP based on imported rock phosphate and sulphur, the proportion of DAP manufactured, based on imported ammonia and imported phosphoric acid will go down sharply. The appropriateness of continuing with the present arrangement of giving a uniform rate of subsidy to all the units, with reference to cost of production of DAP based on imported ammonia and imported phosphoric acid needs to be examined preferably by the Tariff Commission.

#### **General**

17. The arrangements for the payment of concessions to industrial/importing firms need to be streamlined so as to ensure payment of the amounts due to the units within three to four weeks from the time of sales. Once such arrangements are in place, then in the case of urea also the payment of concessions could be shifted from 'despatch' to 'sales'.

18. As it is basically a question of dealing with industrial units – at least in the case of DAP – these subsidies should appropriately be administered by the Ministry of Chemicals and Fertilizers, along with the concessions for the urea units. The Ministry of Agriculture will continue to have a major role in the fixation of the maximum retail/indicative prices for all types of fertilizers, be it N or P or K.

19. The Commission recommends that if a state government imposes any additional burden, by way of excessive levies on the inputs or on finished fertilizers manufactured/sold in the state then these costs should be passed on to the farmers in that state.

**To Conclude:**

20. The Commission wishes to emphasize that the suggested scheme to take the fertilizer industry to a liberalized competitive set up :

- Retains self sufficiency
- Preserves viability of existing units
- Protects small farmers
- Reduces subsidy outlay and
- Is implementable.

## Rationalizing Fertilizer Subsidies

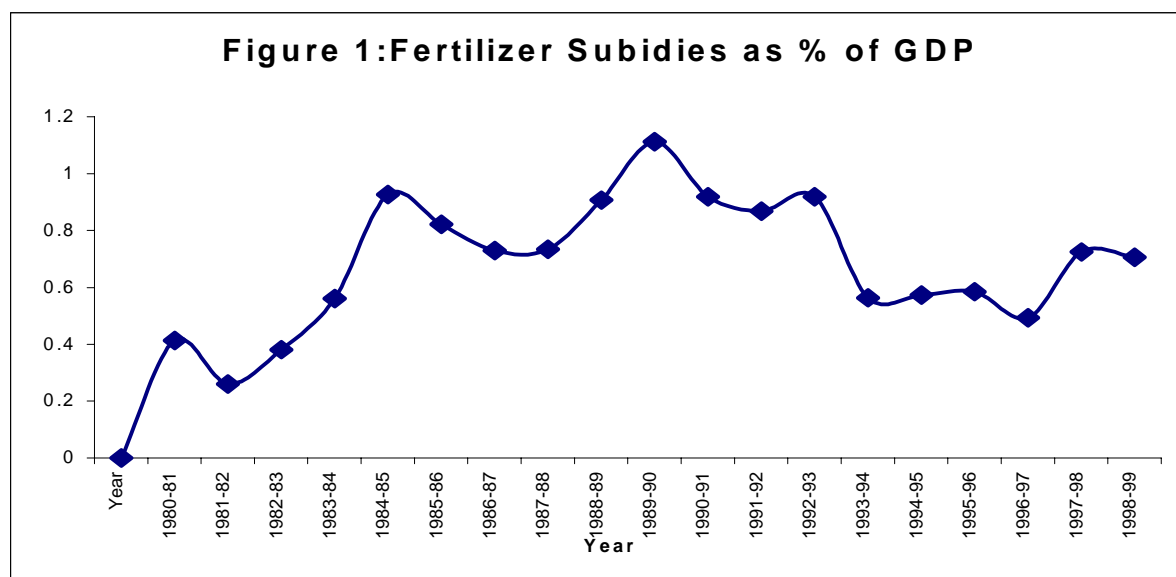
### I. Background

The burden of fertilizer subsidies on the budget of central government has grown dramatically over the years, from Rs.505 crore in 1980-81 to Rs.13244 crore in the Revised Estimates for 1999-2000. The budget estimate for the year 2000-01, after accounting for a 15% increase in the price, is Rs.12651 crore. As will be seen from the statement and the figures given below, expressed as a proportion of the GDP, the subsidies, which touched a high of 1.11% in 1989-90, have, in the last fifteen years tended to move in a narrow band of around 0.71%.

**Table 1: The Burden of Fertilizer Subsidies**

Year	Fertilizer Subsidies In (Rs. Crs)	GDP at Current Prices (Rs. Crs)	Fertilizer Subsidies As % of GDP
1980-81	505	122427	0.41
1981-82	375	144231	0.26
1982-83	605	158851	0.38
1983-84	1042	185991	0.56
1984-85	1927	207869	0.93
1985-86	1924	234159	0.82
1986-87	1897	260030	0.73
1987-88	2164	294851	0.73
1988-89	3201	352703	0.91
1989-90	4542	408661	1.11
1990-91	4389	477814	0.92
1991-92	4800	552768	0.87
1992-93	5796	630772	0.92
1993-94	4400	781345	0.56
1994-95	5241	914194	0.57
1995-96	6235	1067220	0.58
1996-97	6093	1237290	0.49
1997-98	10026	1384446	0.72
1998-99	11388	1612383	0.71
1999-20 (RE)	13244		
2000-01 (BE)	12651		

**Source:-** *Economic Survey 1999-2000, Budget Documents 2000-01.*



**Source:** *High Powered Review Committee (HPRC), 1998, pp.86., Economic Survey 1999-2000, table S-68.*

2. These subsidies reflect the difference between the prices at which farmers are provided fertilizers and the costs of domestic production and imports. It is necessary to differentiate between the subsidies that benefit the industry and those subsidies that accrue to the farmers. The two subsidies are motivated by two different objectives. The industry subsidies are to ensure a desired level of domestic self-sufficiency in fertilizer availability and the farmer subsidies are to encourage farmers to use fertilizers and to keep food prices low. These two elements therefore need to be dealt with separately.

3. As per the present fertilizer policy, nitrogenous fertilizers, 85% of which is consumed in the form of urea, are sold at a uniform price to farmers all over the country. After the increase of 15 percent in the price in the budget for fiscal year 2000-01, the maximum retail price (MRP) for urea charged is Rs.4600 per tonne. The domestic production of urea in 1998-99 was 19.8 million tonnes and is expected to be around 21 million tonnes in 2000-01. Urea imports in 1998-99 were 0.557 million tonnes. The difference between the cost of production, imports and distribution and the sale price is subsidized by the government. This is estimated to be Rs.8050 crore in the budget for financial year 2000-01 for domestically produced nitrogenous fertilizer. The average subsidy per tonne of urea thus comes to around Rs.4000 per tonne of urea.

4. Phosphatic and potassic fertilizers are decontrolled. Imports can be made by anyone under OGL. The government fixes a maximum retail price (MRP). Thus, diammonium phosphate (DAP) is sold at Rs.8900 per tonne. The importer gets a concession of Rs.950 per tonne and domestic manufacturer gets Rs.2800 per tonne of DAP. All potassic fertilizers are imported and the MRP is fixed by the government and a flat rate of concession is given to importers.

5. The subsidies are larger than necessary as domestic manufacturers of urea are given a cost plus price under the Retention Price Scheme (RPS). This provides very little incentive to domestic manufacturers to cut costs. Also, there are many undesirable consequences on the health of the fertilizer industry. The system needs to be reformed. Before looking at options for reforms, it would be useful first to examine the origin and logic of the present policy.

## **II. The Origin and Logic of the Present Fertilizer Policy**

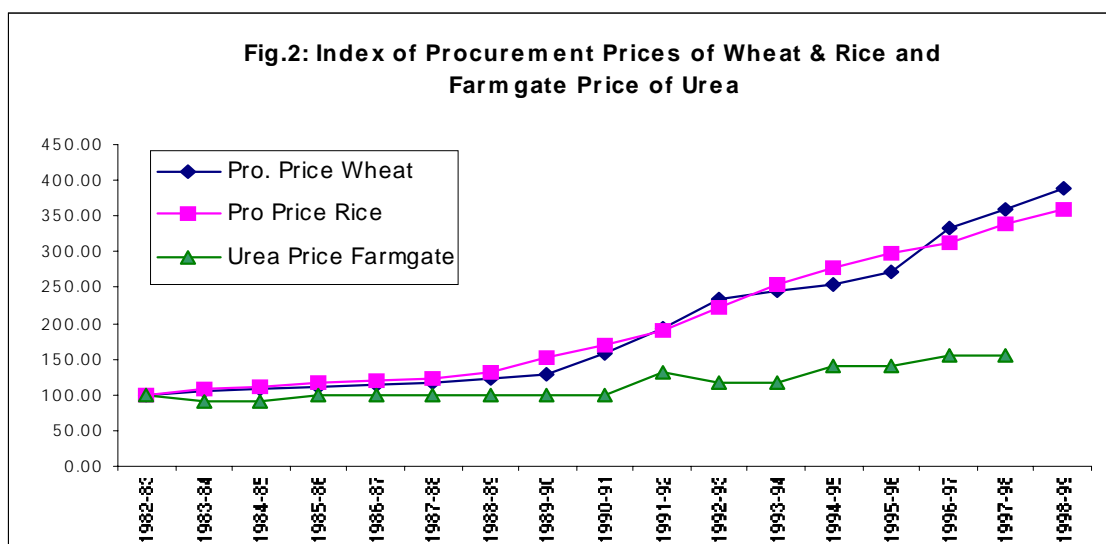
### **(a) Farmer Subsidy**

6. Farmers were provided fertilizers at subsidized prices for two reasons viz.: to induce them to use fertilizers and produce more food and to compensate them for the output price they received, which was kept low to protect consumers. Both these reasons are no longer relevant.

7. In the early days of green revolution, farmers' subjective confidence in the performance of high yielding varieties (HYV) was low. To get optimal results from HYVs, use of chemical fertilizers was recommended. Farmers, particularly small farmers, were reluctant to adopt HYVs as the expenditure on fertilizer with their perceived uncertainty, concerning the performance of HYVs, posed a financial risk. Fertilizer subsidy to encourage farmers to use it, to accelerate the adoption of HYVs and to increase food production seemed justified. The policy did work and fertilizer consumption grew from 1.1 million tonnes of total nutrients (N, P&K) in 1966-67 to 18.37 million tonnes in 1999-2000.

8. Today, however, HYVs are accepted by all and there is no need to subsidize fertilizers to promote adoption of HYVs. On a per hectare basis, farmers irrespective of their size of holding, now use more or less the same amount of fertilizers in similar agro-climatic environment. It is true that farmers use much more fertilizer per hectare on irrigated land compared to unirrigated land. However, among farmers with irrigated land, the intensity of fertilizer is similar for farmers with different size of holdings. Thus, there is no longer a need to subsidize fertilizer for promoting adoption of HYVs. Fertilizer subsidies have become in the nature of income subsidy to the farmers partly to compensate them for the low output price.

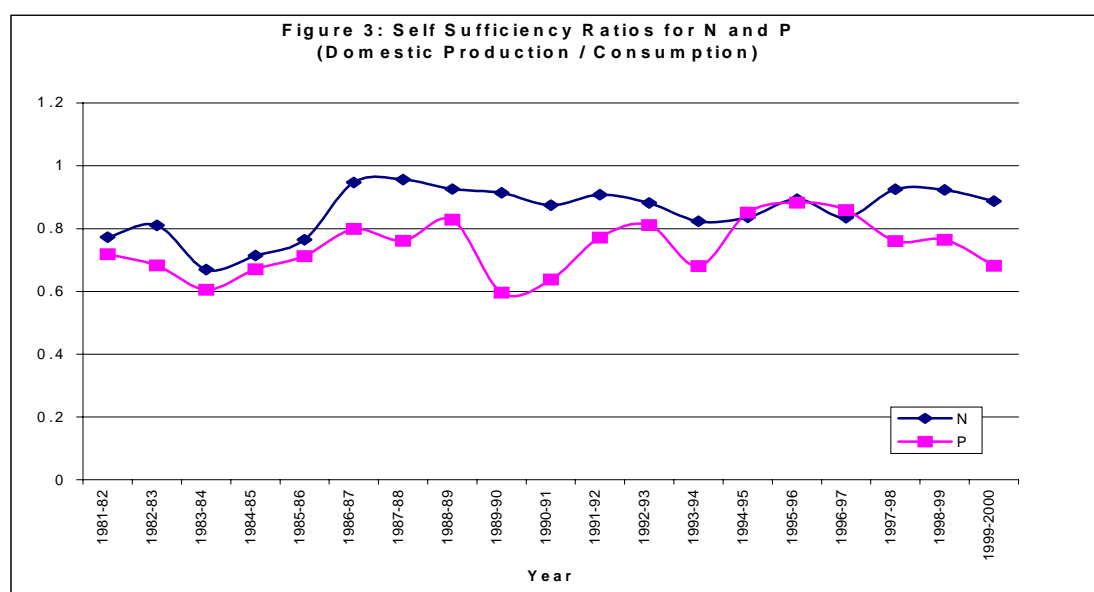
9. Over the years, the output prices received by farmers have increased substantially but the prices for fertilizers have not kept up pace. As will be seen from Figure 2, by 1997-98, procurement prices of wheat and rice increased by 250 percent over 1982-83 whereas farm-gate price of urea increased during the same period by less than 50 percent. The prices of wheat and rice are now near to international prices and the justification for low fertilizer price to compensate farmers for low output prices now is very weak.



**Source:** High Powered Review Committee (HPRC), 1998, pp.86  
Economic Survey 1999-2000, table S-68

### (b) Retention Price Scheme for the Industry

10. The retention price scheme fixes prices for fertilizer manufacturers at which the government subsidizes their entire output. The prices are fixed unit-wise after allowing a post-tax return of 12% on net worth in addition to all elements of cost arrived at on the basis of a combination of norms and actuals. The main motivation was to ensure domestic supply and self-sufficiency. The policy has over the years, increased domestic production from 0.04 million tonnes of nutrients (N+P+K) in 1950-51 to 0.43 million tonne in 1966-67 to 14.89 million tonnes in 1999-2000. The self-sufficiency ratios for nitrogenous and phosphatic fertilizers have grown as shown in Figure 3. A high self-sufficiency ratio of 0.90 is obtained for N. The ratio for P has fluctuated from 0.59 in 1989-90 to nearly 0.88 in 1995-96. However, self-sufficiency in P is not real as domestic production is based mostly on imported Phosphoric Acid.



**Source:** Based on Fertilizer Statistics 1998-99, and Economic Survey, 1999-2000.

11. A high level of self-sufficiency in fertilizer was considered desirable as the world fertilizer market was very thin and India was a major consumer. Whenever India or China entered the world market to import more than their normal imports, prices shot up and whenever India or China commissioned sizable additional capacity, world price came down. When the world price is high, it would seem attractive for India to set up a plant but when the plant comes on stream, world market price on occasions has come down to below India's variable cost. This was particularly true for Indian plants using naphtha as a feedstock. In the early days when availability of natural gas in the country was much less than now, to develop a domestic fertilizer industry using naphtha or fuel oil as feedstocks, some subsidy to manufactures seemed inevitable.

12. Any reform of the unit-wise retention price scheme, thus, must deal with the issue of self-sufficiency.

### **III. The Unit-wise RPS and its Consequences**

13. The present policy has led to a large and growing burden of fertilizer subsidy on the central government's budget. While a high degree of self-sufficiency has been attained, it has been attained at a high cost. Were the Indian fertilizer industry to be exposed to global competition, based on the retention prices, firms producing some thirty percent of output would not be able to compete. It is relevant to note that because of WTO commitments, the quantitative restrictions on urea imports may have to be removed by end of March 2001. This is however an unbound item, and the degree of protection could be set at an appropriate level.

14. The Fertilizer Prices Committee (FPC) that recommended the scheme in 1977 recommended only a group-wise scheme cautioning explicitly against a unit-wise scheme. The government nonetheless, introduced a unit-wise scheme.

15. The High-powered Committee of Secretaries on RPS in 1986 recommended a group-wise scheme, which was rejected by the government.

16. The recommendations of the High Powered Committee on Fertilizer Consumer Prices, 1987 were also not implemented by the government.

17. A Bureau of Industrial Costs and Pricing (BICP) study in 1992 recommended a normative approach for determining capital costs. This was also not implemented.

18. Even the recommendation of the Joint Parliamentary Committee set up in 1991, that a cut-off point of 110 percent capacity utilization be fixed for capital related charges was not implemented by the government.

19. Finally, HPRC's recommendations given in April 1998 to reform and phase out the unit-wise RPS have yet to be acted upon.

20. The unit-wise retention price scheme has been grossly misused. It is a cost-plus scheme and provides no incentive either to buy the cheapest plant or to cut down operating costs. There is no pressure to be efficient on fertilizer producers.

21. The industry has grown in a way that shows many anomalies. Some of these may be the outcome of changing government policies. In 1988, three gas based plants were commissioned. All of them had the same capacity of 7.26 lakh tonnes of urea per year. The public sector plant cost Rs.507 crore, the co-operative plant cost Rs.648 crore and the private sector plant cost Rs.702 crore. Again three plants commissioned over 1993-95, all using gas, having the same capacity of 7.26 lakh tonnes of urea per year, did cost Rs.1,153 crore, Rs.1,480 crore and Rs.960 crore respectively.

22. The HPRC has estimated that in 1995-96, the 14 plants working above 110 percent of the assessed capacity collectively were able to realize Rs.569 crore more by way of capital related charges. In 1996-97, this figure was Rs.520 crore. The average capacity utilization of these 14 plants was 120% in 1995-96 and 112% in 1996-97. To the extent capital costs are inflated, the excess payment increases further.

23. The unit-wise RPS is also virtually impossible to administer correctly. As will be seen from the statement at **Annexe II** which sets out the unit-wise retention price of urea as on 1<sup>st</sup> January 2000 there are large differences even among plants using the same feedstocks. While the Capital Recovery Charges (CRCs) could vary depending on when the plants were built, considerable variation is also noted in the variable costs from plant to plant. These can be sought to be explained in terms of mix of feedstock, quality of feedstock, location of plant, peculiarities of technology and other unit specific features. The point is that the asymmetry of information and incentives could mostly result in an outcome favourable to the manufacturers. Further, the unit-wise RPS results in high cost fertilizer, excess payments to industry and provides no incentives to be cost efficient. Moreover, it is extremely difficult, if not impossible, to administer it without these disadvantages.

#### **IV. Reforming the Fertilizer Policy**

24. In designing the new policy, it has to be noted that the situation has changed and some of the motivations that led to the present policy are no longer relevant:

- The green revolution technology is widely accepted. There is thus no need to subsidize fertilizers to induce farmers to adopt it. Also bufferstock of foodgrains exceeded (in June 2000) 40 million tonnes.
- Global fertilizer production capacity has substantially increased over the years and possibility of import of LNG has opened up.

25. However, given the present situation, whatever new fertilizer policy is suggested, it should meet the following requirements.

- It should protect small farmers' real incomes.
- Food production should not slump.
- It should promote a balanced use of N, P and K by farmers.
- Self-sufficiency in fertilizer production at a reasonable level should be ensured.
- It should promote competition in fertilizer industry to induce efficiency in a self-enforcing way.
- It should be enforceable.

26. The goal of policy reforms should be to eventually bring fertilizer prices charged to farmers to the level of import parity price. This could be accomplished over a period of 5 to 7 years, if fertilizer prices are raised in step with procurement prices of foodgrains. At the same time, the RPS needs to be dismantled and replaced by a system that provides incentives to manufacturers to be cost efficient, and ensures a desired level of self-sufficiency with minimal subsidy from the government. The need for some support to the industry, even after removal of controls arises due to the need to produce fertilizers domestically with feedstock other than gas. So long as the prices of phosphatic and potassic fertilizers are raised only in tandem with the increases in prices of urea, in order to ensure a proper N-P-K balance, the requirement of subsidies for P&K fertilizers would also continue.

27. The CIF price of imported urea was around US\$165 per tonne in the first week of August 2000. With handling and distribution cost of Rs.1100 per tonne and an exchange rate of Rs.46 per dollar, the import parity farm-gate price of urea should be Rs.8690 per tonne. Compared to the earlier parity price of Rs.4600, this is an increase of 89 percent. With a fertilizer use elasticity of -0.3, an increase of 89 percent would reduce fertilizer consumption by 27 percent, which amounts to a fall of 5.4 million tonnes of urea. This could lead to a reduction in foodgrains output of around 13.5 million tonnes.

28. If output is not to fall, foodgrain prices will have to increase steeply. Such steep increase in food prices would hurt the consumers and particularly the poor consumers who spend a large part of their incomes in food. Among these are the marginal and small farmers who consume themselves much of what they grow.

29. Thus, fertilizer price cannot be decontrolled suddenly. It can have an adverse impact on agricultural production, food prices and the level of poverty. Prices should be increased gradually.

## V. Protecting Small Farmers

30. Even when fertilizer prices are raised and farmers compensated by higher procurement price for their output there is a problem. Many marginal and small farmers are subsistence farmers and have a very small marketable surplus. Higher output price is irrelevant for them and higher fertilizer price would indeed reduce their real incomes. In any case, the scope for increasing procurement prices is limited as they have already reached international levels and high procurement prices lead to high foodgrains stocks with the government.

31. It is therefore, necessary to take steps to protect small farmers when fertilizer prices are increased. Two possible alternatives are:

- a) Introduction of a dual price scheme under which all cultivator households are given 120 Kgs. of fertilizers at subsidized prices and
- b) Expansion of Employment Guarantee Scheme and rural works programmes to provide additional incomes to small farmers. If such rural programmes are directed towards improvement of land and development of minor irrigation schemes, they will in addition to providing wage income, increase productivity of land and income to farmers even when fertilizer prices are increased. The details and rationale for these schemes are given in **Appendix**.

## VI Moving the Industry from the Control Regime to Competitive Self-Reliance

### (i) UREA

32. In the country's drive towards self-sufficiency in fertilizer, the urea industry has evolved under the unit-wise RPS Scheme. Today there is a mix of plants using different technologies and different feedstocks. Feedstock cost is a critical element of cost of urea. Of the total reassessed installed capacity of 21.39 million tonnes 56 percent is gas based, 22 percent naphtha based, 9 percent is fuel oil (FO) or light sulphur heavy stock (LSHS) based and 12 percent is mixed fuel based mostly gas and naphtha. The plants based on natural gas have the lowest cost. India is short of natural gas and this has necessitated promotion of naphtha and FO based plants for attaining a measure of self-sufficiency and to contain cost of imports. This was necessary as India and China are major importers of fertilizer and whenever they step up their imports, international prices increase.

33. The competitiveness of Indian industry can be gauged by comparing the cost of manufacture with the price of imported urea. While the world market price has fluctuated over the years, the import price of urea (CIF), shown in table 8, has varied from US \$ 225 per tonne in 1995, to US \$ 100 per tonne in 1998. A long run average

cost of US \$ 150 (CIF) may be considered as a benchmark figure. At an exchange rate of Rs.46/- per dollar this is about Rs.8000 per tonne, inclusive of handling, transport and dealership margins. On the other hand, the weighted average cost of production for all domestic units as per the RPS is Rs.9,147 per tonne - Rs.6,774 per tonne for gas-based plants, Rs.13,142 for naphtha based and Rs.10,360 for FO/LSHS based plants. Among the gas based plants the retention price varies from Rs.4800/- to Rs.8300/-. A part of these higher costs can be attributed to capital costs being placed higher and the capacities lower.

34. Thus, the gas-based plants can be competitive and can produce urea at costs comparable to the CIF price of \$ 150/tonne of imported urea. However, the naphtha and FO/LSHS based plants cannot compete with imported fertilizers at this price. Even among the gas-based plants, some cannot compete against imports, when the import price goes down, say to below \$ 120, as was the case late last year as well as early this year. The reason is that for many Middle East producers, the marginal cost of production is lower as the price of Natural gas, is less than \$ 1.0 per Mbtu compared to \$ 2 to 2.5/Mbtu in India.

35. The Retention Price Scheme System has inhibited the industry from taking any steps for reducing costs in a big way. For instance, though the industry is free to import naphtha/FO/LSHS it still gets most of its requirement from the domestic industry. The high prices charged by the domestic industry and the heavy incidence of sales tax on these feedstocks in most of the states, results in the cost of these feedstocks to the fertilizer units being much in excess of import parity prices. Still the industry does not resort to imports, as on the one hand, this would call for special efforts in negotiating for such imports and for creating additional handling facilities, while on the other they do not lose anything by buying the feedstock at high prices as they get compensated for this under the Retention Price Scheme. Second, while the present actual norms for energy efficiency are quite low in relation to the optimal norms – for instance it is 7.61 million kilo calories per tonne of urea produced in naphtha based units compared to only 6.00 million kilo calories per tonne in efficient modern units - no major initiatives have been taken to improve the energy efficiency in naphtha/FO/LSHS based units as this process would involve fresh capital investment and also in any case these inefficiencies are fully compensated for under the Retention Price Scheme.

36. The RPS has also encouraged some state governments to impose excessive taxes and duties on fertilizer feedstocks and their prices vary across states. Under the Retention Price Scheme, the excess cost is borne by the central government. The state governments should be advised not to levy duties and taxes in excess of the levels prescribed by the Government of India. The Commission recommends that if a state government imposes any additional burden, by way of excessive levies on the

inputs or on finished fertilizers manufactured/sold in the state, then these costs should be passed on to the farmers in that state.

37. If the industry is to be moved to a competitive mode, it is clear that the present unit based Retention Price Scheme needs to be abolished. Along with this the other controls like distribution control and price controls will also have to be removed. Considering that the cost of production of urea as per the RPS varies from Rs.4851 to Rs.15175 per tonne, the removal of all these controls at one go could however result in:

- a) The high cost units not being able to compete either with the other units in the country or with imports even at \$ 160 CIF and closing down, resulting in the urea self-sufficiency, so carefully built up in the last two decade, being undermined considerably – even upto 30%.
- b) The sale price and the variations from place to place being so high as to affect urea off-take leading to a sharp shortfall in domestic foodgrains production.
- c) The interest of the farming community particularly, those in the marginal cultivator category and those who produce for their own consumption, being affected adversely by a sharp rise in urea price.
- d) If the urea market is completely freed, urea price will equal import parity price. If this were done suddenly, the world market price would increase. Even at a high price of Rs.10,000 per tonne of urea, most of the naphtha based units would close down, as even their short run variable cost is higher than that. This would lead to imports in excess of some 5 million tonnes of urea. This in turn would result in the world market prices shooting up and it would not be possible to import 5 million tonnes even at Rs.10000 per tonne (~ \$ 215). Even assuming that it is possible to effect imports at Rs.10,000, the subsidy burden would be large, if the demand is to be maintained at 21 million tonnes and farm-gate price at Rs.4600 per tonne (of which Rs.600 is distribution cost). The subsidy would be  $2.1 \times (10600 - 4600) = \text{Rs.}12600$  crore for urea alone.

38. In the circumstances, the Commission would recommend the dismantling of the control system in a phased manner over four stages. By the commencement of the fourth stage, the fertilizer industry could be decontrolled and be required to compete with import albeit with a small level of protection to ensure self-sufficiency. The scheme envisaged is in the spirit of the recommendations of the HPRC. **The transition however has to be gradual.** It is structured to move from the unit-wise RPS through essentially a group based system where the economic viability of all existing plants is preserved, to reduce the number of groups and removal of all controls in the final stage.

39. The proposals relating to the first stage are as under:
- a. The existing units will be grouped into 5 categories – pre-1992 gas based units, post 1992 gas based units, naphtha based units, FO/LSHS based units and mixed feedstock units. The individual retention price scheme will be scrapped and in its place a urea Concession Scheme with a fixed amount of concession for each of these groups will be introduced. The need for a separate group for post 1992 gas based plants arises because these plants have come up in the expectation of continuation a unit wise RPS and in an environment of high cost capital. Thus, for some years, they need a special concession to pay for their capital costs. The older plants, which also come under a high capital cost regime, have recovered their capital costs over the years under the RPS. A similar break up of plants using naphtha is, however, not required as the higher energy efficiency of the post 1992 plants compensates for the higher capital related charges. The feedstock cost differential given to naphtha based plants covers their uncovered capital costs as well.
  - b. The distribution control mechanism will be done away with.
  - c. The maximum retail price arrangement will be continued, the concessions for each group being so calibrated as to enable the units to sell at the stipulated maximum retail price.
  - d. For each of the five groups, the average retention price as on 1.4.2000, including equated freight and dealership margin, as worked out by FICC but rounded off to immediate lower one hundred rupees is taken as the base. For the last three categories of units, based on naphtha, FO/LSHS and mixed feedstocks, the concession is determined on the assumption that these units will import their feedstocks requirements or procure these from domestic sources if the latter are willing to sell these at import parity prices. It is the resultant savings in the feedstock costs for these three groups that accounts for the reduction in the total subsidy outgo in this stage.
  - e. Having regard to the large fluctuations in the import prices of feedstocks, it will be necessary to redetermine the concession to these groups of units every three months with reference to the prevailing import prices. When there is a reduction in the import parity prices of these feedstocks, the concession payable to the units would go down. It may be noted that this, however, is done only group-wise and not plant-wise. Whenever there is an increase in the import parity prices of these feedstocks, the

additional costs should be passed on to the consumers through a suitable increase in the maximum retail price so that the total amount payable by way of concessions does not go up significantly. The revision in issue price to farmers however, should be done every season rather than every three months.

- f. At the level of concessions suggested, the total amount of support payable to the industry will work out to Rs.7204 crore in a full year as against Rs.9155 crore estimated by FICC as the subsidy payable for urea under the present scheme in the current year.

40. As any change in procedure could result in disruption in supply of urea, at least for a short period, it will be best to introduce the new scheme at the commencement of the slack season. In the circumstances, the Commission would recommend the introduction of the new scheme with effect from 1<sup>st</sup> February 2001. The announcement in this regard should however be made straightaway so that all units can prepare for the transition.

41. As the new scheme is to be introduced only with effect from 1.2.2001, the full benefit in terms of reduction in the subsidy outgo will be realized only in the year 2001-2002. As far as the current year is concerned, the subsidy outgo will be determined largely by the present RPS, which will be continued upto 31.1.2001, with such changes as the Alagh Committee may recommend in this scheme, with some savings in the last two months due to the introduction of the new scheme with effect from 1.2.2001. Thus the subsidy outgo in the current year could be of the order of Rs.8500 crore. The Commission would urge that steps be taken to settle all outstanding disputes with the industry under the existing scheme before the end of this year itself, so that none of these impacts on the implementation of the new scheme.

42. Stage-II visualizes a reduction in the concession payable to the 5 groups of units taking into account the reduction in capital recovery charges in all five groups and the expected progress in improving energy efficiency in the case of the three non gas based groups of units. Taking the latter first, it is noticed that in the case of the naphtha based units the average energy consumption is 7.61 million kilo calories per tonne of urea produced now as against an ideal norm of 6.0 million kilo calories. This translates to an additional cost of Rs. 1800 per metric tonne of urea. The achievement of the ideal norm would however involve substantial capital investment and also take time. Some of the units may therefore find it difficult to undertake energy efficiency enhancement programmes. The Commission has therefore determined the reduction in the concession to be paid to the naphtha based units in Stage-II on the assumption

that these units would be able to move to an average energy consumption of 7.00 million kilo calories per tonne of urea by 1.4.2002 when Stage II begins.

43. In the case of FO/LSHS, the present average of 10.9 million kilo calories per tonne of urea is an average of a mixed bag of units with Neyveli at 14.69 million kilo calories and Sindri at 13.03 million kilo calories and the three units of NFL varying between 9.53, 10.48 and 10.02 million kilo calories. In case of these units, the target to be achieved is taken as 9.75 million kilo calories and the concession fixed on that basis. It may be mentioned that GNFC, which has a new modern unit, has an energy efficiency of 8.13 million kilo calories per tonne of urea. Such a level cannot possibly be achieved by any of the other units without major changes in the existing facilities and so a modest achievable target of 9.75 million kilo calories is taken.

44. In the case of mixed plants where there is no comparable new plant or norm, the Commission has assumed an improvement in energy consumption from the present average of 7.3 million kilo calories per tonne of urea now to a figure of 7.00 million kilo calories per tonne of urea. As a lead-time of about 18 months should be sufficient to put through the changes necessary for achieving the higher efficiency norms suggested above, the Commission would recommend the introduction of the second stage with effect from 1.4.2002. Those units, which are able to achieve the higher energy efficiency norms earlier, would stand to gain in the remaining period of Stage-I. This should serve as an incentive to all these units to push ahead with energy efficiency enhancement programme as fast as they can.

45. As far as the gas based plants are concerned, the reduction in concession is on account of the reduction in capital related charges in 2001-2002. The concession payable in Stage-II would stand reduced by Rs.250 per tonne in the case of pre-1992 plants and Rs.450 per tonne in the case of post-1992 plants.

46. On this basis, the total concession to be made available to the industry from 1.4.2002 would be Rs.6159 crore per annum.

47. In the third stage, on the assumption that all naphtha based plants as also FO/LSHS and mixed feedstock plants, if these find it economical, could move over to use of LNG as a feedstock in about 4 years, the concessions to be given to the units with effect from 1.4.2005 could be further reduced reflecting the changes suggested for the three stages and further reduction in capital recovery charges for all the units. On this basis, as will be seen from the statement at Annexe-I, the total concession payable to the industry, with an MRP of Rs.4600, would be Rs.4656 crore in the year 2005-06.

48. As can be seen in the spread sheet in the **Annexe - I**, the average retention price for all the units taken together in the year 2005-2006 works out to Rs.6913/-. If from this, the equated freight and handling charges are deducted, the net realization ex-factory would be around Rs.6400 per tonne which is the level of the LRAC for gas based plants as worked out by HPRC in 1998 and subsequently updated by the FICC as on 1.12.1999. Thus, the stage is set, as suggested by the HPRC, to move on to a system of determination of concessions on the basis of LRAC and feedstock differential. Considering however that in that year only units which switch over from naphtha to LNG will have a cost higher than this LRAC, it will be necessary to give feedstock differential only for these units while the LRAC will apply not only for the gas based units but also to FO/LSHS/mixed energy units as well. In the case of the LNG based plants – the new ones as well as existing Naphtha based plants converting to LNG - this additional amount would work out to Rs. 1,900 per tonne. For those naphtha based plants, which continue to operate with Naphtha as the feed stock, the feedstock differential will be limited to the amount allowed for a plant using LNG as the feedstock. Should any new unit be based on gas, it would get no feedstock differential. While new FO/LSHS plants may not be a viable option, both because of the high capital costs, as well as environmental considerations, should any such unit be put up, it would be entitled to feedstock differential as calculated for that particular feedstock, with the feedstock differential for LNG units acting as a ceiling.

49. Given the increasing gap between the urea price and the procurement prices for rice and wheat in the last two decades, there is a case for a substantial increase in the open market price of urea. However, the Commission would recommend a moderate increase in price every year of 7% in real terms every year from April 2001 onwards. With this order of increase, the MRP as on 1<sup>st</sup> April, 2006 will be Rs.6903 per tonne. This is close to the LRAC figure of Rs.7000 per tonne including freight and dealers' margin. Therefore 1<sup>st</sup> April 2006 will be the most opportune movement for decontrolling the industry and allowing it to compete with imports where the duty levels are so adjusted to ensure its availability at the farm-gate at Rs.7000 per tonne. This way no concessions would need to be paid to the existing units based on gas, FO/LSHS or mixed energy while the Naphtha based units whether or not they convert to LNG, could be given a feedstock differential equal to the difference between LNG cost and domestic gas cost. The subsidy outgo in 2006-2007 will be limited to this feedstock differential outgo only which may be of the order of Rs.1000 crore. All new units, as well the existing units, adopting substantial expansion would be eligible for the feedstock differential, with that for LNG units operating as a ceiling.

50. The schedule of concessions are shown in the table 1:

**Table 1 : Schedule of Concessions**

Feedstock	Ist stage concession (Rs./MT)		IIInd Stage	IIIrd Stage	IV th stage	
	Based on existing RPS and domestic price of Inputs	Savings at import Parity Price	Net concession 1.2.2001 to 31.3.2002	1.4.2002 to 31.3.2005	1.4.2005 to 31.3.2006	from 1.4.2006
	1	2	3	4	5	6
<b>Natural Gas</b>						
Pre 1992	1300	0	1300	1050	800	0
Post 1992	2900	0	2900	2450	2000	0
Naphtha	8400	1900	6500	5800	3900	1900
FO/LSHS	6400	3250	3150	2200	2200	0
Mixed feedstock	4000	600	3400	3000	2450	0

**New Plants** : For non gas based new plants or existing plants adopting substantial expansion would be given appropriate feedstock differential subject to the feedstock differential for LNG plants acting as the ceiling.

**Notes:**

- The concessions in column (1) are so determined that along with the net receipt of Rs.4000 from the farm-gate price of Rs.4600, the concession gives nearly the weighted average retention price to each group.
- Column (3) shows the savings that can result in stage I, if feedstocks are at import parity prices. Freeing of imports will ensure that plants get feedstock at such prices by February 1,2001.
- The reduction in column (4) compared to column (3) reflects change in feedstock use efficiency in stage II. Modest achievable targets have been assumed and plants are expected to attain them by 31<sup>st</sup> March, 2002.
- Column (5) reflects the concession in the third stage, incorporating the further reduction on account of non gas based units switching over to LNG as feedstock.
- Column (6) reflects the concession, by way of feedstock differential only in the fourth stage commencing 1.4.2006 when the industry is decontrolled and the imports are made available at Rs.7000 per tonne at the farmgate.

- (f) In all the three stages, the final concession levels determined have also to take into account the progressive reduction in capital recovery charges.
- (g) The Commission has recommended a price increase of 7% in real terms per annum from 1.4.2001, reaching Rs.7000 on 1.4.2006. To the extent of price increase in earlier years, the concession indicated in columns 3,4 and 5 would stand reduced.

51. The schedule of subsidy outlay under various stages is given in Table 2.

**Table 2 : Urea Subsidy Outlay in Different Phases**

	(Rs.Crores/year)				
	2000-01	2001-02	2002-05	2005-06	Apr.1,2006 onwards
<b>a) No increase in Issue price</b>					
Farm-gate price - Rs./mt of urea	4,600	4,600	4,600	4,600	4,600
<b>Concession to industry</b>	9,155	7,204	6,159	4,656	5,837
<b>b) Increase in issue price @ 7 % p.a.</b>					
Farm-gate price - Rs./mt of urea	4,600	4,922	5,267 to 6030	6,452	7,000
<b>Concession to industry (net)</b>	9,155	6,556	4,817 to 3,280	927	1,004
<b>c) Cost of coupon system :</b>					
Coupons to 105 million farmers		270	560	1,556	2,016
At 80 Kgs. of urea per family to be supplied At Rs.4,600 per Mt	-		to 1,201		

52. Even after the urea market is freed from all controls, it could be ensured that the retail price to the farmer approximates the LRAC through the system of free imports and variable customs levy. The domestic sale price of urea in the open market should not be allowed to exceed this LRAC level as otherwise it would amount to penalizing the farmers by denying them the benefit of imports at zero duty.

53. To the extent achieving prescribed levels of self-sufficiency in urea require commissioning of new plants based on FO/LSHS/LNG, it will be necessary to continue to provide the feedstock differential cost reimbursement to these new units on the lines suggested earlier. This in turn means that the system of concessions for the new units and for the existing naphtha units would have to be continued on a long-term basis.

54. As pointed out earlier, raising farm-gate price for all farmers will have an adverse impact on small farmers. Some safety mechanism as suggested earlier is needed. If a coupon scheme should be introduced under which all 105 million farm households irrespective of their holding size, are given coupons for 120 kg. of fertilizers, including 80 kg. of urea at Rs.4600 per tonne, the additional subsidy burden on urea would be Rs.1500 crore. Thus, the total subsidy on urea will be around Rs.2500 crore.

55. The details of the units that will be covered under each group, the order of concessions to be made available to each group and in each of the three stages, the

basis on which these amounts have been worked out, as also the formulae to be adopted for adjusting, on a six monthly basis, the level of concessions, or for increasing the MRP with reference to the fluctuations in the price of feedstocks are all set out in the statements at Annexe I. The starting point for this exercise is the Retention price as estimated for each unit as on 1.4.2000 after taking into account the changes in the capacity assessment introduced by the Ministry of Chemicals and Fertilisers earlier this year and including the equated freight and distribution margins. The weighted average, calculated for each group and rounded off to the nearest lower one hundred rupees has been taken as the basis, on which are super-imposed the changes arising from the recommendations now made by the Commission for each group and in each stage. These figures have been worked out by the FICC based on the interaction with the Expenditure Reforms Commission and within the short time given to them. It will be necessary for the Department of Expenditure and the Department of Fertilisers to check these figures again with FICC for accuracy.

56. In all these calculations, the desired farm-gate price is prescribed as MRP. In order to encourage the industry to become fully competitive it would be necessary to dismantle such price control also as early as possible. In the circumstances, if the industry were seen to respond well and adjust to the changes in Stage-I, then the Commission would recommend that the MRP be replaced by an indicative price in Stage II itself. Given the dominant position that the public sector units have and using imports (through these units) as an added leverage, it should not be difficult to have an indicative price regime, announced at the beginning of each season at more or less the same level as the MRP for the earlier period. The only shortcoming in such an arrangement would be the eagerness of each unit to maximize its sales in nearby areas and as a result distant areas not getting adequate supplies and at the indicative prices. At that stage, it would be necessary to set apart about Rs.200 crore for compensating the units for the additional freight charges involved in effecting supplies in the North East, Jammu & Kashmir and other difficult areas. Correspondingly, the concessions payable to the different groups of units would stand reduced by Rs.100 per tonne, as the concession amounts have been fixed, to start with, allowing for full compensation for equated freight.

57. The subsidy is now paid out to the industry on the basis of despatches. The distribution control acts as a check on despatches being effected in excess of the likely consumption. As the distribution controls are to be removed when the concession scheme is introduced, a situation could arise in which the units claim the concession amounts are on the basis of despatch, a good part of which could remain unsold, if the off-take is poor for some reason or other. It will therefore be necessary to fix a cut off point – say 95% of the capacity as recently reassessed, up to which the concessions could be disbursed with reference to despatch. A suitable mechanism would need to

be put in place, whereby concessions on further despatches are paid out on the basis of an assessment of the likelihood of these stocks being actually sold. The ideal arrangement would be to shift the payment of the entire concession amount on the basis of certification of sales by state government agencies, as is now the case in respect of DAP Sales. There are however complaints of inordinate delays in the payment of subsidy on the sales of DAP effected in some States. The Commission would not therefore favour a change over to this system, till the procedures followed in the case of DAP sales are streamlined and payment of subsidy amounts are effected within a reasonable time limit, say three or four weeks.

## **(ii) Phosphatic and Potassic Fertilisers**

58. Till 1992, these fertilizers were also covered by the subsidy scheme administered by the Department of Fertilisers. While potash is wholly imported, in the case of phosphatic fertilizers a part is imported, while the balance is domestically manufactured but based on imported rock phosphate/sulphur/ phosphoric acid.

59. In 1992, both sets of fertilisers were decontrolled and the subsidies removed. The resultant increase in prices lead to a sharp drop in the off-take of these fertilizers, thus upsetting the NPK balance built up over the earlier three decades. These fertilizers were therefore again brought under control, this time under the aegis of the Ministry of Agriculture. Necessary subsidy is given on imported potash, imported DAP and domestically manufactured DAP, at levels, which will ensure availability of these fertilizers at pre-determined maximum retail prices. The subsidy is released with reference to sales as certified by state government agencies.

60. In 1999-2000, the total consumption of potassic and phosphatic fertilizers, including complexes was 170 lakh tonnes consisting of 67 lakh tonnes of DAP, 37 lakh tonnes of SSP, 45 lakh tonnes of complexes and 21 lakh tonnes of MOP. Of the DAP sales, 33 lakh tonnes was met through imports, while the balance was produced by the 9 units in the country. Of the domestic output, about 70% was based on imported ammonia and imported phosphoric acid; 12% on domestically manufactured ammonia and imported phosphoric acid, 14% on imported ammonia, rock phosphate and sulphur; while 4% was based on domestically manufactured ammonia, imported sulphur and rock phosphate. The cost of production as assessed by BICP in 1998 varied from Rs.11483 for the first group to Rs.9499 per tonne for the last group. The subsidy is a uniform one, determined with reference to the cost of production of the first category.

61. The provision in the current year's budget towards the provision of subsidy on these fertilizers is Rs.4093 crore. For the muriate of potash the subsidy is Rs.2800 per tonne with reference to a maximum retail price of Rs.4255 per tonne. In the case of DAP it is Rs.950 per tonne for imported DAP and Rs.2800 in the case of domestic manufactured DAP, both related to a MRP of Rs.8900 per tonne.

62. In the case of both these fertilizers, the MRP will have to be so fixed in relation to the MRP/indicative price of urea so as to ensure a desired NPK balance. In the circumstances the ERC will only suggest that once urea price is re-determined every six months, the prices of potassic and phosphatic fertilizers should be suitably adjusted, as advised by the Ministry of Agriculture to ensure the desired NPK balance. It will be useful if government could announce in advance the formula to be adopted for fixing the prices of P & K fertilizers with reference to a given urea price. It should be noted that whenever Government raise the real price of urea, the prices of P and K fertilizers should also be increased to maintain a balanced use, with a corresponding reduction in subsidy given for P and K.

63. Having said this, the ERC has three other observations to make, all relating to DAP. First, with one more unit commissioned last year for the manufacture of 1.5 million tonnes of DAP based on imported rock phosphate and sulphur, the proportion of DAP manufactured, based on imported ammonia and imported phosphoric acid will go down sharply. The appropriateness of continuing with the present arrangement of giving a uniform rate of subsidy to all the units, with reference to cost of production of DAP based on imported ammonia and imported phosphoric acid needs to be examined preferably by the Tariff Commission.

64. The second issue relates to the inordinate delays in certification of sales in some state governments, which in turn results in delay in disbursement of the subsidy amounts to the industrial/importing firms. While there are reports that action has already been initiated to minimise such delays, the arrangements need to be streamlined so as to ensure payment of the amounts due to the units within three to four weeks from the time of sales. Once such arrangements are in place, then in the case of urea also the payment of concessions could be shifted from 'despatch' to 'sales'.

65. The third relates to the ministry that should be administering these subsidies. As it is basically a question of dealing with industrial units – at least in the case of DAP – these subsidies should appropriately be administered by the Ministry of Chemicals and Fertilisers, along with the concessions for the urea units. The Ministry of Agriculture will continue to have a major role in the fixation of the Maximum Retail/indicative prices for all types of fertilizers, be it N or P or K.

## **VII Conclusion:**

The Commission wishes to emphasize that the suggested scheme to take the fertilizer industry to a liberalized competitive set up :

- Retains self sufficiency;
- Preserves viability of existing units;
- Protects small farmers;
- Reduces subsidy outlay; and
- Is implementable.

## Statement showing tentative financial impact of Urea Concession Scheme

Sl. No.	Company - Unit	Year on stream	Estimated Production 2000-2001 (Lakh Mts.)	Average energy consumption 1998-99 (M Kcal per Mt of urea)	Estimated R.P. as on 1.4.2000 including E.F.&D.M. (Rs./Mt) #	Existing subsidy at estimated retention Price (Rs./Cr.)	Market Price (Rs./Mt)	Stage I (W.E.F. 1.2.2001 to 31.03.2002)			Stage II (1.4.2002 to 31.3.2005)		Stage III @ (1.4.2005 to 31.03.2006)			
								Concession (Rs./MT)			Total estimated realisation including concession (Rs./Mt)	Total Annual pay out (Rs./Cr.)	Net concess- ion (Rs./MT)	Total Annual pay out (Rs./Cr.)	Net concess- ion (Rs./Mt)	Total Annual pay out (Rs./Cr.)
								Based on domestic price of inputs	Savings at import parity price	Net concess- ion (Rs./MT)						
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
<b>Feedstock - Gas pre 92</b>																
1	HFC, Namrup III\$	1987	1.40	20.750	4,851	4	4,600	1,300	-	1,300	5,900	18	1,050	15	800	11
2	KRIBHCO	1985	16.20	6.359	5,558	155	4,600	1,300	-	1,300	5,900	211	1,050	170	800	130
3	IFFCO,Aonla	1988	8.53	6.107	5,700	94	4,600	1,300	-	1,300	5,900	111	1,050	90	800	68
4	NFL,Vijaipur	1988	8.53	6.311	5,878	109	4,600	1,300	-	1,300	5,900	111	1,050	90	800	68
5	RCF,Trombay V	1982	3.23	11.062	6,935	75	4,600	1,300	-	1,300	5,900	42	1,050	34	800	26
6	IGFC Jagdhishpur	1988	8.53	5.827	6,833	191	4,600	1,300	-	1,300	5,900	111	1,050	90	800	68
	<b>Sub - Total</b>		<b>46.43</b>	<b>6.967</b>	<b>5,953</b>	<b>628</b>	<b>4,600</b>	<b>1,300</b>		<b>1,300</b>	<b>5,900</b>	<b>604</b>	<b>1,050</b>	<b>489</b>	<b>800</b>	<b>371</b>
<b>Feedstock - Gas post 92</b>																
1	IFFCO,Aonla Expn.*	1996	8.53	5.751	6,893	196	4,600	2,900	-	2,900	7,500	247	2,450	209	2000	171
2	NFL,Vijaipur Expn *	1997	8.53	5.898	6,913	197	4,600	2,900	-	2,900	7,500	247	2,450	209	2000	171
3	NFCL - Kakinada	1992	5.97	5.947	8,122	210	4,600	2,900	-	2,900	7,500	173	2,450	146	2000	119
4	CFCL - Gadepan	1994	8.53	6.056	7,614	257	4,600	2,900	-	2,900	7,500	247	2,450	209	2000	171
5	Oswal Fert	1995	8.53	6.182	7,667	262	4,600	2,900	-	2,900	7,500	247	2,450	209	2000	171
6	TCL_ Babrala	1994	8.53	5.743	8,319	317	4,600	2,900	-	2,900	7,500	247	2,450	209	2000	171
	<b>Sub - Total</b>		<b>48.64</b>	<b>5.929</b>	<b>7,558</b>	<b>1,439</b>	<b>4,600</b>	<b>2,900</b>		<b>2,900</b>	<b>7,500</b>	<b>1,408</b>	<b>2,450</b>	<b>1,191</b>	<b>2000</b>	<b>974</b>
<b>Feedstock - Naphtha</b>																
1	FACT Cochin	1973	2.60	11.743	15,343	279	4,600	8,400	1,900	6,500	11,100	169	5,800	151	3900	101
2	Dunkans Kanpur	1969	6.75	7.964	13,087	573	4,600	8,400	1,900	6,500	11,100	439	5,800	392	3900	263
3	IFFCO-Phulpur	1981	5.12	8.192	11,927	375	4,600	8,400	1,900	6,500	11,100	332	5,800	297	3900	199
4	MCF Mangalore	1976	3.40	7.490	13,233	294	4,600	8,400	1,900	6,500	11,100	221	5,800	197	3900	133
5	MFL, Madras	1971	4.28	9.579	15,175	453	4,600	8,400	1,900	6,500	11,100	278	5,800	248	3900	167
6	SFC - Kota	1969	3.30	7.370	11,287	221	4,600	8,400	1,900	6,500	11,100	215	5,800	191	3900	129
7	SPIC-Tuticorin	1975	6.24	7.438	13,637	564	4,600	8,400	1,900	6,500	11,100	405	5,800	362	3900	243

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
8	ZACL-Goa	1973	4.13	7.900	14,159	394	4,600	8,400	1,900	6,500	11,100	268	5,800	239	3900	161
9	IFFCO,Phulpur Expn*	1997	8.53	6.222	13,242	738	4,600	8,400	1,900	6,500	11,100	555	5,800	495	3900	333
10	CFCL expansion*	1999	8.53	6.222	11,940	626	4,600	8,400	1,900	6,500	11,100	555	5,800	495	3900	333
	<b>Sub-Total</b>		<b>52.88</b>	<b>7.606</b>	<b>13,142</b>	<b>4,517</b>	<b>4,600</b>	<b>8,400</b>	<b>1,900</b>	<b>6,500</b>	<b>11,100</b>	<b>3,437</b>	<b>5,800</b>	<b>3,067</b>	<b>3900</b>	<b>2,062</b>
	<b>Feedstock - FO/LSHS</b>															
1	FCI Sindri \$	1979	2.45	18.800	11,401	167	4,600	6,400	3,250	3,150	7,750	77	2,200	54	2200	54
2	NLC (Neyveli) \$	1979	1.37	16.338	12,496	108	4,600	6,400	3,250	3,150	7,750	43	2,200	30	2200	30
4	GNFC Baruch	1982	6.44	8.130	8,461	248	4,600	6,400	3,250	3,150	7,750	203	2,200	142	2200	142
4	NFL - Nangal II \$	1978	3.30	9.534	10,890	208	4,600	6,400	3,250	3,150	7,750	104	2,200	73	2200	73
5	NFL,Bhatinda	1979	5.12	10.480	11,217	338	4,600	6,400	3,250	3,150	7,750	161	2,200	113	2200	113
6	NFL, Panipat"	1979	5.12	10.019	10,479	301	4,600	6,400	3,250	3,150	7,750	161	2,200	113	2200	113
	<b>Sub-Total</b>		<b>23.79</b>	<b>10.808</b>	<b>10,360</b>	<b>1,370</b>	<b>4,600</b>	<b>6,400</b>	<b>3,250</b>	<b>3,150</b>	<b>7,750</b>	<b>749</b>	<b>2,200</b>	<b>525</b>	<b>2200</b>	<b>525</b>
	<b>Mixed energy</b>															
1	GSFC Baroda	1967	3.60	7.993	10,845	225	4,600	4,000	600	3,400	8,000	122	3,000	108	2450	88
2	IFFCO,Kalol	1975	5.45	6.776	8,016	186	4,600	4,000	600	3,400	8,000	185	3,000	163	2450	133
3	RCF,Thal	1983	14.58	7.140	7,589	436	4,600	4,000	600	3,400	8,000	496	3,000	437	2450	357
4	NFCL - Expn*	1998	5.97	7.047	10,524	354	4,600	4,000	600	3,400	8,000	203	3,000	179	2450	146
	<b>Sub-Total</b>		<b>29.60</b>	<b>7.158</b>	<b>8,658</b>	<b>1,201</b>	<b>4,600</b>	<b>4,000</b>	<b>600</b>	<b>3,400</b>	<b>8,000</b>	<b>1,006</b>	<b>3,000</b>	<b>887</b>	<b>2450</b>	<b>724</b>
	<b>Total</b>		<b>201.34</b>	<b>7.366</b>		<b>9,155</b>						<b>7,204</b>		<b>6,159</b>		<b>4,656</b>
	<b>Weighted average realisation per Mt of urea</b>				<b>9,147</b>						<b>8,178</b>		<b>7,659</b>		<b>6,913</b>	

**NOTES:****Stage-I**

- (1) # The estimated retention price given in Column-6 have been arrived after incorporating –
  - The effect of interim reassessment of capacity (Method IV) with effect from 1.4.2000.
  - Estimated escalations/de-escalations in the prices of gas, naphtha and FO/LSHS on a tentative basis.
  - Further these prices do not reflect the VII Pricing due from 1.7.97 because no decision has been taken so far with regard to revision of consumption norms and recognition of capital expenditure.
  - In respect of gas based plants, the consumption of alternative feedstock/fuel i.e. naphtha to the extent of about 10%-15% is also built in the above retention prices.
- (2) \* Estimated retention price for expansion units of IFFCO-Aonla, NFL-Vijaipur, IFFCO-Phulpur, NFCL-Kakinada and CFCL-Kota have been further increased on tentative basis by 5% for increase in consumption norm and revision in conversion cost because final retention price of these units are yet to be fixed.
- (3) In case of NFCL-1, CFCL-1 and TCL the FICC has approved the revision of Retention prices on account of time overrun. Further, the effect of 3% interest concession for which entitlement period is already over has not been built up in the retention price. If all these are considered at a later date, retention price would go up provided no further reassessment of capacity and VII Pricing is done.
- (4) In case of NFCL expansion consumption of raw material is assumed in the ratio of 30:70 for gas and naphtha respectively. However, this ratio is likely to change in future in view of additional allocation of gas. Hence actual mix needs to be reviewed periodically at the time of grant of concession.
- (5) \$ In case of HFC – Namrup, FCI – Sindri and NLC only FICC norms have been adopted because actual energy consumption is much higher than FICC norms mainly due to low capacity utilization.
- (6) A unit will be in the mixed energy group if consumption of naphtha/FO/LSHS is more than 25%.

- (7) KRIBHCO – Hazira and RCF – Thal at the landfall point for gas. Hence are not incurring gas transportation charges as other units at HBJ pipeline are required to bear the same. Similarly, HFC –Namrup is getting gas at concessional rates. These being unit specific advantages have not been adjusted for.
- (8) Savings at export parity price for naphtha and FO/LSHS have been derived based on the price behaviour prevailing in March 2000. Any subsequent increase in the international prices without corresponding increase in the domestic price will distort the assumption. Further, if fertilizer units fail to get naphtha, FO/LSHS at the assumed prices, the required concession will require to be modified suitably.

### ***Stage-II***

- (9) Concessions have been reduced in Stage-II towards targetted savings in energy in respect of naphtha, FO/LSHS and mixed energy plants assuming that plants will carry out necessary modifications and make their own investments.

### ***Stage-III***

- (10) @ In Stage-III, LNG price has been assumed at 75% of import parity price of naphtha. Based on this the reduction in concession for naphtha based and mixed energy based units works out at about Rs.1500 and Rs.550 per MT of urea respectively. For switching over to LNG a unit will have to incur additional capital cost. The impact of the same has not been accounted for in the above calculation in the absence of firm estimates of the investment required.

## STAGE I

## Saving at import parity price

Particulars	Gas	Naphtha	FO/LSHS	Mixed	Total
Price (Rs.per unit) - Indian	3,984	14,537	11,482	-	-
Avg. Price ( Rs.per unit) - Imported	3,984	11,900	8,480	-	-
Savings - Rs. Per unit	-	2,637	3,002	-	-
Energy per unit ( Mkcal)	9,250	10,500	10,000	-	-
Average price (Rs. Per Mkcal) - imported	431	1,133	848	-	-
Price (Rs. Per Mkcal ) - Indian	431	1,384	1,148	-	-
Savings (Rs.per Mkcal)	-	251	300	-	-
Energy (Mkcal per MT of urea)	-	7.60571	10.85654	7.3316	-
Savings (Rs. Per MT of urea)	-	1,910	3,259	600	-
Production (MT)	9,507,500	5,287,700	1,735,000	3,603,300	20,133,500
<b>Savings (Rs./Crores)</b>	-	<b>1,010</b>	<b>565</b>	<b>216</b>	<b>1,792</b>

## Statement showing the savings per MT of urea for mixed energy group at import parity price

Unit	Year	Energy distribution (Mkcal)				Total
		Gas	Naphtha	FO/LSHS	Others	
GSFC - Baroda	1999-2000	3.01	2.23	1.73	1.02	7.99
IFFCO - Kalol	1999-2000	3.62	1.9	0.84	0.43	6.79
RCF - Thal	1999-2000	5.21	1.93	-	-	7.14
NFCL - Kakinda expansion	1999-2000	2.12	4.94	-	-	7.06
Unit	Year	Rate difference per Mkcal				
		Gas	Naphtha	FO/LSHS	Others	
GSFC - Baroda	1999-2000	-	251	300	-	
IFFCO - Kalol	1999-2000	-	251	300	-	
RCF - Thal	1999-2000	-	251	300	-	
NFCL - Kakinda expansion	1999-2000	-	251	300	-	

## Savings at import parity price

Unit	Year	Savings in cost (per MYT of urea)				Production (MT)
		Gas	Naphtha	FO/LSHS	Others	
GSFC - Baroda	1999-2000	-	561	520	-	360,000
IFFCO - Kalol	1999-2000	-	476	251	-	544,500
RCF - Thal	1999-2000	-	484	-	-	1,458,000
NFCL - Kakinda expansion	1999-2000	-	-	-	-	-
				<b>Weighted average</b>	<b>631</b>	<b>2,362,500</b>

NFCL expansion has been excluded for working out the weighted average because of allocation of gas to the unit as a result of which the unit is likely to become a gas based unit.

## STAGE II

## Statement showing the capital cost and weighted average cost of capital recognised in RPS

Sl. No.	Particulars	Estimated production 2000-01 (MT)	Capital cost Rs.Crores	Financing of capital cost (Rs.Crores)		
				Equity	Long term Loans	Total
1	IFFCO Aonla expansion	853400	986	0	986	986
2	NFL Vijaipur expansion	853400	1031	0	1031	1031
3	CFCL Kota	853400	1153	366	787	1153
4	TCL Babrala	853400	1164	45	1119	1164
	Total / Weighted average	3413600	1084	411	3923	433

# As per the decision of FICC, internal resources are to be treated as loans. Accordingly internal resources deployed in M/s. IFFCO, Aonla expansion, NFL Vijaipur expansion and TCL Babrala have been treated as loans and thus, shown as above.

## Sl.No. Particulars

1	Average capital cost ( Rs.Crores)	1084
2	Average cost of capital (%)	17.88
3	Depreciation for 3 years (Rs. Crores)	206
4	Reduction in NFA assuming no capital additions has been done - Impact thereof (Sl.No3 * Sl.No.2)- Rs.Crores	37
5	Annual production - Est. MT	853400
6	Reduction in return - (Rs.per MT)	431
	<b>Say</b>	<b>Rs. 450</b>

Sl. No.	Particulars	Targeted reduction in energy consumption (Mkcal)			Imported price Rs.per Mkcal	Savings Rs. Per MT of urea
		Present Actual Weigh.avg.	II Stage Target	Targeted saving in energy		
1	Gas based units -					
	Pre 1992	6.62	6.62	-	-	-
	Post 1992	5.93	5.93	-	-	-
2	Naphtha based units - overall	7.61	7.00	0.61	1,133	686
3	FO/LSHS based units - overall	10.86	9.75	1.11	848	938
4	Mixed Energy based units - overall	7.33	7.00	0.33	1,133	376

## STAGE II

**Estimated savings on account of switch over to LNG by existing Naphtha based and Mixed Energy plants assuming that LNG cost will be 75 % of the import parity price of Naphtha**

Particulars	Naphtha	Mixed Energy	Total
Avg. Naphtha Price - Imported	11,900	-	-
LNG price (75 % of imported Naphtha)	8,925	-	-
Savings (Rs. Per unit)	2,975	-	-
Energy per unit ( Mkal-Naphtha)	10,500	-	-
Energy per unit ( Mkal-LNG)	10,500	-	-
Naphtha cost (Rs. Per Mkal)-Imported	1,133	-	-
LNG cost (Rs. Per Mkal)	850	-	-
Savings (Rs.per Mkal)	283	-	-
Energy (Mkal per MT of urea)	7.00000	-	-
Savings (Rs. Per MT of urea)	1,983	550	-
Production (MT)	5,287,700	3,603,300	-
<b>Savings (Rs./Crores)</b>	<b>1,049</b>	<b>198</b>	<b>1,247</b>

**Statement showing the savings per MT of urea for mixed energy group at import parity price**

Unit	Year	Energy distribution (Mkcal)				Total
		Gas	Naphtha	FO/LSHS	Others	
GSFC - Baroda	1999-2000	3.01	2.23	1.73	1.02	7.99
IFFCO - Kalol	1999-2000	3.62	1.90	0.84	0.43	6.79
RCF - Thal	1999-2000	5.21	1.93	-	-	7.14
NFCL - Kakinda expansion	1999-2000	2.12	4.94	-	-	7.06

Unit	Year	Rate difference per Mkal			
		Gas	Naphtha	FO/LSHS	Others
GSFC - Baroda	1999-2000	-	283	-	-
IFFCO - Kalol	1999-2000	-	283	-	-
RCF - Thal	1999-2000	-	283	-	-
NFCL - Kakinda expansion	1999-2000	-	283	-	-

**Savings at import parity price**

Unit	Year	Savings in cost (per MYT of urea)				Production (MT)
		Gas	Naphtha	FO/LSHS	Others	
GSFC - Baroda	1999-2000	-	633	-	-	360,000
IFFCO - Kalol	1999-2000	-	537	-	-	544,500
RCF - Thal	1999-2000	-	546	-	-	1,458,000
NFCL - Kakinda expansion	1999-2000	-	-	-	-	-
<b>Weighted average</b>					<b>557</b>	<b>2,362,500</b>

NFCL expansion has been excluded for working out the weighted average because of allocation of gas to the unit as a result of which the unit is likely to become a gas based unit.

### Formula for dealing with Escalation in prices of feedstocks

#### Raw Material cost escalation formula

Because MRP is being fixed by the Government, there is need for periodic correction of the concession amount for the increase/decrease in the cost of raw materials.

#### Price variation for naphtha

For naphtha the following formula could be used

Base Import parity price		US \$
FOB		230
Premium		6
Ocean freight & insurance		12
Port charges		3
Inland freight		9
Total landed cost		260
Exchange rate	Rs./US\$	45.60
<b>BASE IMPORT PARITY PRICE in Rs.</b>		<b>11855</b>

Current import parity price to be revised every quarter

FOB	Current FOB	to be reckoned on the basis of average of daily FOB prices Ex. Singapore and Ex. Gulf as published in Platts, Singapore
Premium	6	This will be as per base price
Ocean freight & insurance	12	This will be as per base price
Port charges	3	This will be as per base price
Inland freight	9	This will be as per base price
<b>Total landed cost</b>	<b>Current FOB+30</b>	
Exchange rate	ER = SBI	Average of the daily TT selling rates of SBI for the preceeding quarter
<b>CURRENT IMPORT PARITY PRICE in Rs.</b>		<b>(Current FOB+30) X ER</b>
Differential cost per tonne of naphtha		Current import parity price - Rs.11855

The amount of variation in the concession payable to all naphtha based units will be computed on a normative energy consumption of 7 mmkcal per tonne of urea. Thus for every Rs. 100 increase/decrease in the landed cost of naphtha as calculated above the concession has to be increased/decreased by Rs. 67 per tonne of urea (i.e.  $100 \times 7/10.5$ ).

For **fuel oil based units** the differential cost will be worked out on the same basis as naphtha by taking the appropriate rates and duties

	For feed	For fuel	
Base Import parity price	US \$		
FOB	128	128	
Premium	6	6	
Ocean freight & insurance	12	12	
Port charges	3	3	
Inland freight	9	9	
Total landed cost	158	158	
Duty	0	22	15%
	158	180	
Exchange rate Rs./US\$	45.60	45.60	
BASE IMPORT PARITY PRICE in Rs./Mt	7218	8219	
Average base import parity price Rs./Mt		7719	

Current import parity price to be revised every quarter

FOB	Current FOB	to be reckoned on the basis of average of daily FOB prices Ex. Singapore and Ex. Gulf as published in Platts, Singapore
Premium	6	This will be as per base price
Ocean freight & insurance	12	This will be as per base price
Port charges	3	This will be as per base price
Inland freight	9	This will be as per base price
Total landed cost	Current FOB+30	
Exchange rate	ER = SBI	Average of the daily TT selling rates of SBI for the preceeding quarter
CURRENT IMPORT PARITY PRICE in Rs.		(Current FOB+30) X (ER)
Differential cost per tonne of FO/LSHS		Current import parity price - Rs.11855

The amount of variation in the concession payable to all FO/LSHS based units will be computed on a normative energy consumption of 9.75 Mmkcal per tonne of urea. Thus for every Rs. 100 increase/decrease in the landed cost of FO/LSHS as calculated above the concession has to be increased/decreased by Rs. 97.5 per tonne of urea ( I.e.  $100 \times 9.75/10$ )

For gas based units the variation in the concession payable is to be calculated on a normative energy consumption of 6 Mmkcal per tonne of urea. The average domestic price considered is Rs. 4000 per 1000 SM 3 at a calorific value of 10000 MMKcal per 1000SM3 of gas. Therefore for every Rs.100 increase/decrease in the price of natural gas the concession for gas based units is to be increased/decreased by Rs. 60 per tonne of urea ( I.e.  $Rs.100 \times 600/1000$ ).

### **Methodology for effecting changes in the MRP for neutralising the feedstock price increases/decreases**

It is the government's intention that the total concession outflow should not increase due to future increases in feedstock prices. In order to recoup the entire impact of feedstock price increases and consequent increase in concession amounts, as computed above, the issue price may be adjusted from time to time.

To illustrate, if there is an increase of Rs. 500 in the import parity price of naphtha, then the change in the issue price will be as follows :

Increase in the Naphtha import parity price - Rs. per Mt.	500	
Increase in cost per tonne of urea at energy consumption of 7 Mmkcal	333	(500X7/10.5)
Production by naphtha based units - Lakh Mts.	53	
Total impact - Rs. Crores	176	
Total production in the country - Lakh Mts.	201	
Increase in issue price required - Rs per tonne of urea	88	

The issue price increase/decrease if any, for whatsoever reason will be adjusted in the concession amount. Input cost increases will independently be adjusted in the concession amounts to the concerned category of units.

### **Other cost escalations**

This is towards salaries & wages, insurance, repairs and maintenance, selling expenses, freight charges and other overheads. This will be computed on the basis of the change in the WPI as published by RBI on an yearly basis. 50 % of such change shall be the basis for calculation of the escalation required. This (50 % of percentage WPI change) shall be calculated on the issue price for determination of the quantum of per tonne increase in concession amount for all category of units. Should however the Government want to not to increase the outflow of concession on account of such cost escalations, they may increase the issue prices appropriately.

## Break up of Retention Prices of Urea Various Fertiliser Units

As on 1/1/2000

Sl. No	Company-Unit	Assessed Prodn. (MT)	Variable Cost	Conversion Cost inclu. Selling Exp.	CRC Including Dep.	Retention Price Notified*
1	2	3	4	5	6	7
<b>UREA</b>						
<b>Feedstock: Gas</b>						
1.	GSFC-Baroda	306543	7964	1147	646	9757
2.	HFC- Namrup III	289760	1669	738	1670	4077
3.	HFC- Namrup I & II	161500	1702	1147	733	3582
4.	IFFCO-Aonla	691651	2935	607	1756	5298
5.	IFFCO-Aonla Exp.	620000	2442	508	3399	6349
6.	IFFCO-Kalol	313950	5164	608	994	6766
7.	INDOGULF-Jagdishpur	689368	3396	764	1883	6043
8.	KRIBHCO-Hazira	1276319	3027	584	1205	4816
9.	NFL- Vijaipur	690519	3217	505	1477	5199
10.	NFL-Vijaipur Exp.	620000	2628	480	3442	6550
11.	NFCL-Kakinada	461985	2079	1218	4790	8087
12.	RCF-Thal	1305325	3259	722	1233	5214
13.	RCF-Trombay-V	286283	4244	845	573	5662
14.	CFCL-Kota	697304	3317	699	3727	7743
15.	TATA Chemicals	690936	2965	814	3763	7542
16.	OCFL	697304	3032	726	3727	7485
		<b>9798747</b>	<b>3197</b>	<b>704</b>	<b>2266</b>	<b>6167</b>
<b>Feedstock: Naphtha</b>						
1.	FACT-Cochin	255872	12539	1016	536	14090
2.	HFC-Barauni	147200	13685	1708	1329	16722
3.	HFC-Durgapur	138400	11820	1718	825	14363
4.	ICI-Kanpur	555813	10492	1128	526	12146
5.	IFFCO-Phulpur	406487	8825	913	1075	10813
6.	IFFCO-Phulpur II	620000	7768	535	3697	12000
7.	MCFL-Mangalore	271257	10288	1053	695	12036
8.	MFL-Madras	110812	12522	1337	450	14309
9.	SFC-Kota	267667	8862	1252	378	10492
10.	SPIC-Tuticorin	428927	10602	1272	599	12473
11.	NFCL II-Kakinada	413217	5325	842	4015	10182
12.	ZACL-Goa	228744	12057	972	408	13437
		<b>3844397</b>	<b>9663</b>	<b>1031</b>	<b>1513</b>	<b>12208</b>
<b>Feedstock: F.O./LSHS</b>						
1.	FCI-Sindri	246955	7984	1218	445	9647
2.	GNFC-Bharuch	492282	5768	788	1077	7633
3.	NLC-Neyveli	121355	8690	2093	425	11208
4.	NFL-Nangal	260328	8620	1039	363	10022
5.	NFL-Bhatinda	461697	8369	1138	1003	10510
6.	NFL-Panipat	403855	7779	1051	877	9707
		<b>1926472</b>	<b>7586</b>	<b>1087</b>	<b>801</b>	<b>9474</b>
<b>Feedstock: Coal</b>						
1.	FCI-Ramagundam	222750	9290	1221	735	11246
2.	FCI-Talcher	222750	8440	1383	848	10671
		445500	8865	1302	792	10959
	<b>Total-Urea</b>	<b>16015116</b>	<b>5435</b>	<b>845</b>	<b>1868</b>	<b>8148</b>

\* Ad-hoc Retention Price

**Cumulative Percentage Distribution of (All) Rural Households by size class of Operated Area (ha) – Year 1992**

	nil	Less than 0.002	0.002-0.20	0.21-0.41	0.41-0.51	0.51-1.0	1.01-2.00	2.01-3.00	3.01-4.00	4.01-6.00	6.01-8.00	8.01-10.0	10.01-12.0	12.01-20.0	
INDIA	0 20	0 22	1 42	3 50	5 55	16 70	34 84	49 91	58 94	67 96	72 97	79 98	85 99	88 99	96 100
Andhra P.	0 37	0 37	1 49	3 56	6 62	17 74	40 88	60 94	67 96	75 98	78 98	86 99	90 99	93 100	97 100
Bihar	0 14	0 19	3 47	8 59	12 65	29 80	54 92	69 96	77 98	85 99	89 99	93 100	96 100	98 100	99 100
Gujarat	0 22	0 25	0 37	1 43	3 48	9 60	22 75	37 84	48 89	59 93	66 95	76 97	82 98	90 99	95 100
Haryana	0 15	0 19	0 42	1 45	2 49	5 58	14 70	28 80	40 87	51 92	55 93	64 96	69 97	72 97	88 99
Karnataka	0 18	0 19	0 35	1 39	3 45	9 59	25 75	41 86	50 90	61 94	65 95	74 97	81 98	85 99	96 100
Madhya P.	0 18	0 22	0 30	1 33	1 36	7 49	22 70	37 81	48 87	57 91	65 93	74 96	83 98	87 99	96 100
Maharashtra	0 29	0 32	0 43	1 46	2 49	7 60	18 73	32 83	43 88	55 92	61 94	72 96	80 98	85 99	95 100
Orissa	0 27	0 27	1 40	4 47	8 55	22 71	52 89	72 95	80 97	87 99	90 99	94 100	96 100	97 100	100 100
Punjab	0 23	0 26	1 61	1 63	2 64	6 71	17 80	30 87	44 91	54 94	63 95	75 98	84 99	89 99	98 100
Rajasthan	0 11	0 13	0 22	1 28	1 30	6 46	15 63	23 73	32 80	40 85	44 87	54 91	62 94	69 95	87 99
Tamil Nadu	0 36	0 37	3 63	8 70	12 75	29 85	56 94	73 98	80 99	88 99	90 100	93 100	94 100	96 100	99 100
Uttar Pradesh	0 10	0 12	2 33	5 44	9 51	25 71	51 88	68 94	77 97	85 98	89 99	94 100	96 100	97 100	99 100
West Bengal	0 14	0 15	5 49	12 61	18 68	40 83	71 95	85 98	93 99	97 100	98 100	100 100	100 100	100 100	100 100
Kerala	0 6	0 7	12 65	23 77	28 80	52 92	76 98	86 99	91 100	94 100	95 100	97 100	98 100	99 100	100 100
Himachal P.	0 9	0 12	3 30	12 50	18 60	41 82	64 93	77 97	85 99	90 99	91 99	94 100	95 100	95 100	96 100

*Upper line represents percentage of operated area and lower line percentage of households.*

**Source:** NSSO(1998), Sarvekshana Vol.XXII, No.12, July-Sept. 1998 based on tables 1R.

**Percentage distribution of net irrigated area for broad size-class  
of operational holding for each season**

	Broad size-class of operational holding (ha.)	Percentage of net irrig. Area to oper. Area
<b>Khariff</b>		
	0.002 – 0.20	36.56
	0.21 – 0.50	46.13
	0.51 – 1.00	43.54
	1.01 – 2.00	40.85
	2.01 – 4.00	37.66
	4.01 – 10.00	32.90
	10.01 & above	23.43
	All sizes	36.00
<b>Rabi</b>		
	0.002 – 0.20	37.37
	0.21 – 0.50	55.93
	0.51 – 1.00	55.92
	1.01 – 2.00	54.30
	2.01 – 4.00	50.35
	4.01 – 10.00	43.59
	10.01 & above	32.81
	All sizes	47.69

**Source:** Sarvekshana, January-March 1997, pp.436

**Rate of Application of Fertilizers on Irrigated and Unirrigated lands by  
size class of farmers**

Size class of farmers	Total Area operated ('000 Ha.)	Fertilizer Applied (Kg. of Nutrient/Ha.)		Total Fertilizer Consumed ('000 Tonnes Nutrient)	
		N	N+P+K	N	N+P+K
<b>Marginal</b>					
Irrig.	13037	74.51	112.59	975	1468
Unirrig.	16446	25.81	40.12	430	660
<b>Small</b>					
Irrig.	13288	71.36	109.26	980	1452
Unirrig.	20081	23.00	36.50	460	733
<b>All groups</b>					
Irrig.	63224	74.22	111.74	4800	7065
Unirrig.	106973	18.76	30.55	2000	3268

**Source:** Based on Input Survey (1991-92)

## Two schemes to protect small farmers

### (A) Dual Price Through Coupons

1. To reduce fertilizer subsidy without hurting the marginal and small farmers, one option would be to give every cultivator, irrespective of the amount of land he cultivates, 120 kg. of fertilizers (80 kgs. of nitrogenous fertilizers, 30 kgs. of phosphatic fertilizers and 10 kgs. of potassic fertilizers which provide 60 kgs. of nutrient) at the present subsidized price, and sell the remaining fertilizer in the open market at full cost. This will provide more fertilizer than what they currently use to the poorest 50 percent of the farmers. The fertilizer may be given in the form of coupons, which can be traded. The coupons should be of small denominations so that the farmer can buy fertilizer as and when he needs it.

2. In 1998-99, the total consumption of fertilizer material was 32.72 million tonnes (16.797 million tones of nutrient). There are about 105 million cultivation households in the country and giving 120 kg. of fertilizer (of which 80 kg. may be urea) to each household would require  $105 \times 120/1000 = 12.60$  million tonnes of fertilizers. The subsidy required to protect marginal farmer would be  $100 * (12.6 - 32.72) = 38.5$  percent of around Rs.12,651 crore budgeted for 2000-01, i.e. about Rs.4870 crore. The remaining subsidy would get reduced as the free market price is raised.

3. This is possible because land distribution is highly uneven, as will be seen from the statement at Annexe III. In rural India, 44 percent of the cultivators operate only 5.48 percent of the total cultivated land and 63 percent operate only 15.5 percent of the land. It is also known that the farmers irrespective of their land-size use the same amount of fertilizer per hectare. Of course, the intensity differs for irrigated and unirrigated lands and from state to state. Yet, for a given crop in given agro-climatic conditions, the intensity of fertilizer use per hectare does not vary by size of plot. The poorer farmers do have a relatively higher share of irrigated land on which fertilizer intensity is higher, as will be seen from the two statements at Annexe IV. Still the share of the poorest 63 percent of the farmers in irrigated land is less than 20 percent. The poorest 63 percent of the cultivators thus use between 15.5% to 20 % of the fertilizer. At 60 kg. of nutrient per cultivator, they will get more than what they use today. As a group they would be better off and the poorer one will be much better off.

4. The weighted average (weighted by irrigated and unirrigated land shares) use of fertilizer per hectare by farmers who operate 0.5 to 1.0 hectare of land is 72/kg. of fertilizer nutrients. Even a farmer who operates 1 hectare of land, all of which is irrigated, uses 112.6 kg of fertilizer nutrients. 120 kg. of fertilizers (60 kgs. of nutrients) will constitute 53 % of his needs. He will have to buy 53 kgs. of fertilizer nutrients from

the market. However, such a farmer would have adequate marketable surplus to benefit from higher output prices.

5. In fact, the very small farmers who constitute 25 percent of cultivator households, cultivate less than 0.2 hectare of land (average size being only 0.06 hectare) will get much more fertilizer than they need, which they could sell. If they get the market price, this would be an additional income of Rs.400 per household.

6. The statewise data for the use of fertilizer, reveals considerable variation from state to state. The land distribution is uneven in all states. Thus, the poorest 62 percent cultivator households operate 17.5 percent of the land in Andhra Pradesh. The corresponding comparable figures are 56 and 12 for Bihar, 47 and 8.7 in Gujarat, 62 and 14.2 in Haryana, 51 and 9.5 in Karnataka, 61 and 22.3 in Madhya Pradesh, 61 and 18.3 in Maharashtra, 62 and 22 in Orissa, 62 and 6.2 in Punjab, 60 and 14.7 in Rajasthan, 63 and 12 in Tamil Nadu, 68 and 24.6 in Uttar Pradesh, 63 and 17.8 for West Bengal, 64 and 12 for Kerala, and 55 and 18.4 in Himachal Pradesh. Thus, 60 kg. per household would fully protect at least the poorest 50 percent of the cultivating households, and if landless labour households are also given the right to fertilizers, it would provide 70 percent of the poorest households additional income.

7. Another way to examine the adequacy of fertilizer distributed at subsidized price for the poorer households is to see if it would be adequate to produce enough foodgrains for the family to subsist on. For a family of five, 850 kg. of cereals per year is the subsistence requirement. 60 kg. fertilizer nutrients per household would be adequate to produce this in all the major states. For example in Punjab, the average cereal yield is 3670 kg/ha. and the average fertilizer use is 177 kg./ha of nutrients. At that yield rate, 0.275 ha. of land should be enough to produce 850 kg. of cereals. At 177 kg/ha. this requires 49 kg. of nutrients, less than the 60 kg. suggested here. If the farmer has a larger plot, he will need to buy additional fertilizer at the market price, but at the same time, he would have marketable surplus and he would be compensated by the higher procurement price. Thus, the suggested scheme will protect all farmers, small or large, substantially reduce fertilizer subsidy and will constitute a more effective and progressive anti-poverty measure. It would increase effective demand for food and the amount government spends on buying foodgrains for price support operations even with the higher procurement price to compensate for higher fertilizer price, is not likely to increase much and may even come down.

8. As the fertilizer coupons are to be given to everyone and as no targetting is involved, it should be relatively easy to implement. Also the coupons have to be distributed only once a year. It should be possible to do it publicly with transparency and without leakage. This scheme thus should be easier to enforce than any other

mass targeted subsidy scheme of the government. It should be a lot more easy to enforce than the targeted PDS.

**(B) Employment Guarantee Schemes of Rural Works Programmes:**

9. An alternative to the fertilizer coupon scheme to protect the income of marginal farmers when fertilizer prices are increased is set out in the succeeding paragraphs.

10. Employment Guarantee Schemes (EGS) can provide additional employment to poor households. They are self-targeting in that only the poor would come to work on them. They are also self-adjusting. If the rains are good and employment is available on farms, fewer persons would report for work on EGS. On the other hand in a bad year more would demand employment. Also they are self liquidating. If development provides more remunerative jobs, then the demand for employment under EGS would wither away. Moreover, productive assets can be created through EGS, which can increase productivity and create additional productive employment. Even when the assets created are totally infructuous (such as digging holes one day and filling them up next day) the poor get a larger fraction of the money spent by the government compared to untargeted PDS. In Maharashtra, micro-studies show that additional wage income to be 50 paise for every rupee spent.

11. The 15 percent increase in urea price announced in the 2000-01 budget raised the price of urea by Rs.600 per tonne. A marginal farmer with half a hectare of irrigated land and using 120 kg. of urea would pay Rs.72 more for fertilizer. Two days of additional employment provided by an EGS programme can provide the farmer that much in wages. With the saving in the subsidy expenditure by raising fertilizer price the government should be able to run employment guarantee schemes at levels that would more than protect the incomes of the small and marginal farmers. If the rural works programmes are directed towards improvement of land and development of minor irrigation schemes, they would, in addition to providing wage income, increase the productivity, farmers would get higher incomes even with less fertilizers and would be able to pay more for fertilizers.

12. Of course, the problems of leakages and fictitious workers on the muster rolls have to be tackled. Any transfer mechanism requires monitoring.

***To summarize –***

- (a) The Commission would recommend introduction of a dual price scheme in fertilizers. Every cultivator household could be given tradable coupons with which it can purchase 120 kg. of fertilizers(80 Kgs. of urea, 30 Kgs. of phosphatic and 10 Kgs. of potassic) at a specified subsidized price.

The remaining fertilizer has to be bought in the open market at a higher price.

- (b) The price of the balance of fertilizer that is to be bought in the open market should be raised gradually, over a period of time to a price level, which is equal to import parity price. If the price required to ensure a desired level of self-sufficiency in fertilizer production is higher than import parity price, then to that extent fertilizer subsidy to the industry will have to continue.
- (c) If a coupon scheme is considered difficult to implement, the Commission would recommend that adequate expansion of Employment Guarantee Schemes, over and above the normal allocations for such schemes be made and directed to programmes of land improvement and development of minor irrigation.