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Indian Power Policy, Enron and the BoP

Kannan Srinivasan

The Enron deal has given investors an unrealistic expectation of the returns they can receive under the government's power policy. Glimpses provided by documents of how the government decided on Enron show it to have been fully aware of the damage this decision would cause. The Amended Power Purchase Agreement negotiated by the committee appointed by the Shiv Sena-BJP government is even worse for the interests of Maharashtra than the Congress original of 1994. The balance of payments consequences of fuel imports for naphtha and fuel oil-based power plants will be ruinous.

THERE is considerable uncertainty as to what exactly the government has specified will be the returns for the new fast track power projects. It has been generally presumed that a return on equity of 31 per cent would be provided at a plant load factor (PLF) of 90 per cent. This is because the government notification says that this would amount to a return on equity of 16 per cent at a plant load factor of 68.5 per cent – 6,000 hours/kW/year. For every 1 per cent increase of PLF, an additional incentive of 0.7 per cent of the return on equity (ROE) would be paid; it has been taken to mean that this increases by 0.7 per cent of the total equity $\times 21.5 = 15.05$ per cent, which, added to 16 per cent, produces 31.05 per cent.

But the actual text of the Gazette of India notification – Part II Section 3 Sub-section 2 of January 19, 1994 – states that: "For generation of above 6,000 hours/kW/year, the additional incentive payable shall not exceed 0.7 per cent of return on equity, for each percentage point increase of Plant Load Factor above the normative level of 6,000 hours/kW/year." That means not 0.7 per cent of the equity but 0.7 per cent of the return on equity – 0.7 per cent of 16 per cent – which is substantially less. This could mean that Enron's Dabhol Power Company investment and all the new fast track projects could earn returns substantially lower than they have projected.

DISTORTION?

Thereafter a table is furnished comparing the 'Notification Tariff' with the 'DPC Tariff' and claiming that the DPC tariff would be much cheaper. Annexure I to this letter specifies the 'Additional Incentive Charges' at: "0.7 per cent return on equity for each 1 per cent availability over 68.5 per cent, i.e. 15.05 per cent (for a guaranteed 90 per cent availability)." Note that while the notification SO 36(E) has specified "0.7 per

cent of return on equity", this says "0.7 per cent return on equity" – and therefore arrives at 15.05 per cent over and above the 16 per cent return. Could this perhaps be a perversion of the original intent?

Moreover, the text of the notification speaks of costs in relation to the *generating unit*. Not all ancillaries of any supposed investment by Enron or any international investor in Indian power. This would mean that all appurtenant construction – such as the schools, airport, jetty, port, any other such works, and general social uplift in which Enron is supposedly investing – cannot avail of these returns.

Notification SO.251 (E) of the Department of Power issued on March 31, 1992 specifies what the two part tariff for the sale of electricity from thermal power generating stations (including gas based stations) should comprise. This includes the recovery of annual fixed charges consisting of interest on loan capital, depreciation, operation and maintenance expenses (excluding fuel), taxes on income reckoned as expenses, return on equity and interest on working capital at a normative level of generation, and energy (variable) charges covering fuel cost recoverable for each unit (kilowatt hours) of energy supplied. This is based on the norms of operation – which include the station heat rate and the plant load factor – which are both specified for open cycle and combined cycle gas based stations as well as for coal based stations.

What is important is that this entire structure of tariffs – which provides for recovery of costs incurred – is specific to the actual power station itself. It is not meant to provide for the recovery of various ancillary investments. The term that is used throughout is either 'station' or 'unit' or 'project', as in "the date of commercial operation of individual units shall be reckoned as follows" or "in respect of infirm power, i.e. sale of electricity prior to commercial

operation of the unit." Clearly the purpose is to reimburse the actual expenditure on the power plant alone – not pay for incidental expenditure.

The notification makes the distinction of speaking of the 'Generating Company' where that applies – as distinct from the particular unit or project which can avail of full recovery for its fixed and variable charges and maintenance expenses. Clearly all the expenses of the generating company – such as whatever Dabhol Power Company or its parent Enron may have spent educating Indians – cannot be reimbursed.

This is why it provides such generous terms to ensure that there is full recovery of these investments: "The actual capital expenditure incurred on completion of the project shall be the criterion for the fixation of tariff. Where the actual expenditure exceeds the approved project cost the excesses as approved by the Authority shall be deemed to be the actual capital expenditure for the purpose of determining the tariff..."

HOW ENRON DEAL WAS DONE

Secret government documents show that officials were aware of the basic problems in the agreements they concluded with Enron's Indian business, Dabhol Power Company (DPC). They knew there were difficulties associated with the submission of a dispute between the Maharashtra State Electricity Board (MSEB) and DPC, both Indian companies, to an *overseas arbitration*; and with the government's provision of a *sovereign guarantee* for this project.

They knew the cost of power they claimed for DPC was false, for it did not take into account the depreciation of the Indian rupee or the increase in the price of fuel. The escalation in the tariff makes DPC power very expensive and will raise prices for all consumers in Maharashtra.

It was clear at the outset that DPC would demand very major outflows of foreign exchange and that the company would earn windfall profits, out of line with infrastructure projects in India or elsewhere in the world. Other power suppliers who hoped to piggyback on the precedents created by this project may have to wait indefinitely for their clearances. Not a single power purchase agreement has been cleared by the Central Electricity Authority under the new power policy announced in 1991.

The Foreign Investment Promotion Board (FIPB) presided over by A N Varma, then principal secretary to the prime minister, met to discuss the Enron proposal on October 10, 1992. Rebecca Mark, chief executive of Enron Power Development Corporation,

Barclays Bank and Adrian Montagu of Linklaters and Paines made the company's presentation. Cabinet secretary S Rajgopal, power secretary R Vasudevan, secretary, department of economic affairs, Montek Singh Ahluwalia, and additional secretary in the cabinet secretariat V K Shunglu, were among government officials present, but no government law officer or advisor. "The Principal Secretary to the Prime Minister... clarified that in any case there would be no guarantees for the loans being raised from other financial institutions. Enron... asked whether the government of India would be prepared to back up the guarantee of the state government in case the financial institutions insist upon it. Mr Varma firmly rejected the proposal and stated that the government of India's guarantee in such a case is not possible... the question of central government giving further guarantee would raise issues of a constitutional nature... the question of return on the equity was discussed. The cabinet secretary pointed out that this payment will not be in dollars and Enron must take the risk of payment in rupees and then getting it converted in dollar at the then prevailing rate. No government guarantee on the payment of equity could be given."

GOVERNMENT GUARANTEES MSEB
AND EXCHANGE

In fact, despite this categorical statement the government of Maharashtra guaranteed MSEB's payment to DPC. The government of India provided a counter guarantee. Two things were subsequently assured to DPC. First, that MSEB would make these payments. Secondly, and more importantly, that this equity would be remitted to Enron and other foreign shareholders by DPC in India. So under the latter, both the payment of the equity and the availability of foreign exchange were assured.

Yet the Constitution of India specifically makes provision for government guarantees to overseas parties for loans. But it does *not* envisage the government guaranteeing the remittance of equity. As a consequence of the government's volte-face, at a meeting in the room of union government power secretary R Vasudevan on November 8, 1993 these issues were further discussed. There was general awareness about the preferential treatment being given to Enron – as against that provided to Indian firms. "3. Ministry of finance representative wanted to know whether this sort of guarantee has been given to our CPSUs like NTPC." It also became clear that this was not the guarantee of a loan, but the guarantee of exchange availability for a remittance by an Indian company to its overseas promoter – which has not been so far provided to any other company. "They also wanted to know the extent of the amount

TABLE 1: UPPER CASE NAPHTHA CONSUMPTION BY POWER PLANTS

Power Producer	1997-98	1998-99	1999-2000	2000-01	2001-02
NTPC Anta Raj	20	20	20	20	20
NTPC Auriya Uttar Pradesh,	20	20	20	20	20
Haryana (@75MWX6)	224	336	448	560	560
Duncans Uttar Pradesh	60	100	100	100	100
IPP Rajasthan (75)	0	300	540	675	675
RPG Dhoplur Raj	0	500	880	1100	1100
GFC Varanasi Uttar Pradesh	0	140	140	140	140
Ginni Filament Uttar Pradesh	0	140	140	140	140
DVC Maithon West Bengal	10	10	10	10	10
IB Valley Orissa	0	150	300	300	300
Jibiran Manipur	0	0	50	50	50
AEC Gujarat	200	310	310	310	310
Essar Power Gujarat	550	550	550	550	550
GTEC Bharuch Gujarat	200	200	200	200	200
NTPC Kaws Gujarat	250	280	280	280	280
Essar Bhandar Madhya Pradesh	240	400	400	400	400
Raymond Steel Maharashtra	30	30	30	30	30
NTPC Gandhar Gujarat	0	50	100	200	200
Baroda Rayon Gujarat	86	86	86	86	86
Core Healthcare Gujarat	43	43	43	43	43
Indo Rama Gujarat	69	69	69	69	69
Sanghi Cement Gujarat	60	60	60	60	60
Search Chem Gujarat	75	75	75	75	75
S Kumar Synfab Madhya Pradesh	40	40	40	40	40
Godrej Soaps Maharashtra	8	8	8	8	8
Kedia, Jhabua (GA) Madhya Pradesh	0	250	380	380	380
Alpine, Rajgarh Madhya Pradesh	0	250	500	500	500
STI Guna TPS Madhya Pradesh	0	250	500	500	500
Subhash, Khandwa Madhya Pradesh	0	180	240	240	240
ZACL Power Goa	0	75	150	150	150
Enron Dabhol Maharashtra	0	500	1000	1000	1000
RIL Patalganga Maharashtra	0	300	750	750	750
TEC Bhivpuri Maharashtra	0	150	300	300	300
Nippon Denro Pen Maharashtra	0	150	300	300	300
Kalyani Steel Pen Maharashtra	0	150	300	300	300
TNEB Tamil Nadu	50	50	50	50	50
APSEB, V'Swaram Andhra Pradesh	35	35	35	35	35
NTPC Hyderabad Andhra Pradesh	50	440	750	750	750
Spectrum Andhra Pradesh	25	25	25	25	25
GVK Industries Andhra Pradesh	90	90	90	90	90
NTPC K' Kulam Kerala	0	100	350	450	450
DMPC Pillai Peruna Tamil Nadu	0	200	300	420	420
Kannur Power Kerala	0	180	600	750	750
RPG, K'Gode Kerala	0	540	720	900	900
Kumar Energy Kerala	0	250	420	522	522
APSEB (@ 30 MW) Andhra Pradesh	130	200	260	330	330
Shivapriya Inds Andhra Pradesh	75	123	123	123	123
KSEB (@ 40 MW) Karnataka	100	250	420	420	420
Nagarjuna Construct Andhra Pradesh	0	120	200	200	200
Kei, Bijapur Karnataka	0	135	225	225	225
Whitefield, Karnataka	0	150	240	300	300
KSEB Thumbin-Kare, Karnataka	0	108	180	180	180
Palakkad Kerala	0	600	900	1200	1200
Ensearch Kerala	0	0	400	400	400
BPL M'Swar Kerala	0	400	700	700	700
Total	2740	10168	16307	17956	17956

to be guaranteed – whether it will be limited to the amount of loan or the entire payment to be made by MSEB as appears to be the case.” In the same meeting, finance ministry officials also questioned the guarantee of the repatriation of the return on equity: “Finance also sought clarification on the second part of the guarantee relating to... guarantee of foreign exchange availability and repatriation... the promoters as per lender’s requirement would be seeking a formal guarantee from GOI regarding foreign exchange in order to meet their foreign currency liabilities.”

LOBBYING THE ELECTRICITY AUTHORITY

The Central Electricity Authority (CEA) is the public authority in India charged with evaluating power projects – on the basis of the demand for them, the appropriateness of the technology, and the scheme of returns assured to any power company. At every other forum, charm, obfuscation and lobbying prevailed. But the CEA deals with technical issues – where Enron failed to provide satisfaction. As Rebecca P Mark, chairman of Enron Development Corporation, demonstrates in this fax of August 26, 1993 to the then chief minister Sharad Pawar of Maharashtra where this project is located, this firm believes that lobbying – not honest presentation of fact – is what works in India. “A key issue is clearance by CEA. Our people, together with MSEB, have met extensively with CEA this week to answer their questions about the project. The remaining concern seems to reside with Mr Beg, Member Planning for Thermal Projects. He continues to hold up project approval based upon the question of demand for power in Maharashtra. No one from the ministry of power in Delhi has given direction to Mr Beg to move forward on this issue.”

The CEA wrote on September 20, 1993 that: “in order to enable the firm to seek and obtain financial assistance, ‘in principle’ clearance is being communicated to M/s ENRON”. This was provided despite serious reservations expressed by the CEA in this very letter: The power from the project may not be fully absorbed in the Maharashtra system. Hence, agreements for purchase of surplus power by other interested states are to be finalised by government of Maharashtra/MSEB who had entered into MOU with M/s ENRON. The studies carried out by CEA indicate that the project is not the least cost option. Tariff calculations are under preparation in CEA”.

The CEA only provided Enron’s project a *conditional* clearance on the basis of the MSEB averment that the Enron tariff would fit within the guidelines announced by the government: “However, MSEB has intimated

that the tariff offered by M/s Enron is lower than that calculated on the basis of two part tariff notified by government of India. With this background Dabhol [*sic*] TPS is found to be acceptable ‘in principle’.”

Enron’s DPC investment in India seemed to show the way for foreign and domestic investors in power. Yet in their desire to carve out an exception to suit this company, government officials have ensured that no policy can be framed for the industry as a whole.

Now the MSEB in its letter of September 30, 1994 to the energy secretary of the government of Maharashtra says: “This is to state that Maharashtra State Electricity Board had already examined the tariff structure of the Dabhol Power Company and accordingly intimated the Central Electricity Authority *vide* MSEB’s letter # GH/ND/ARJ/ENRON/252 dated September 17, 1993 (copy enclosed for reference) that the tariff offered by M/s Enron is lower than that calculated on the basis of two part tariff notified by Government of India.”

INDIAN PARTIES, FOREIGN LAW

“4. Shri R N Poddar of law ministry... mentioned that the Indemnity Clause is too wide-ranging and needs to be deleted. On the applicability of English Law, the general view was that since it is an agreement between Indian parties, the governing law should be Indian Law.”

In reply to questions raised by the finance secretary and the secretary (exp), it was clarified that “all payments under the PPA are proposed to be covered under the counter guarantee for the entire term of the validity of the PPA. Therefore, the guarantee is not limited only to the amount and period of loan”.

A Confidential Note No 740/06/C/269/94-ES dated July 15, 1994 written by Dinkar Khullar, director in the prime minister’s office, minutes that: “Principal secretary took a meeting at 4.00 PM on Tuesday, July 12, 1994, to discuss the counter guarantee Agreement to be signed for the Dabhol Power Project. Finance secretary, power secretary, law secretary, special secretary, power and chief secretary, Maharashtra were among those present.

“1. Arbitration Clause: M/s Enron had agreed to Indian Law prevailing as the substantive law for the Agreement. However, for Arbitration they wished to have British Law (but there is no British Law, only English and Scottish Law) with the venue being London. It was decided that GOI should retain conciliation as the first step and go along with the Maharashtra government formulation on arbitration while exploring the possibility of Singapore as a venue instead of London.”

A government note of February 1995, discusses what was sought to be achieved in modifying the power purchase agreement: “the arbitration clause has been updated to take account of the Supreme Court ruling in the case of Singer vs NTPC... an agreement to arbitrate is to be governed by a law other than Indian law if the arbitration is to be an international arbitration for the purposes of the Convention and the Act, although the law governing the contract itself may remain as Indian law... the arbitration award would be readily enforceable in India without the risk of a general review of the merits of the case by the Indian courts and the delays consequent upon such a review.”

Before this amendment what would have happened was that the award by English arbitrators would not have been treated as a foreign award under the terms of the Act – and therefore could not be enforced in India. So the agreement of December 8, 1993 was amended as recently as on February 2, 1995 to specify that though the law of the agreement could be Indian, the arbitration would be under English law. It would therefore be treated as a foreign award in India and can in this respect be enforced.

N Ramji, joint secretary, department of power, government of India, observed at one early meeting that: “He made it clear that the government of India would not be in a position to extend any guarantee for these loans. He then directed deputy secretary (Power) Mr Brar to give his observations. These were as follows: (1) The total cash outflow of foreign exchange would be over 1.4 billion dollars. (2) The loan is being repaid in 10 years and thereafter the capacity charge needs to come down. (3) As per his calculations, the ROE was 50 per cent.”

TARIFF UNDERSTATED

Both the government of Maharashtra and Enron claimed that the tariff payable by the company will be Rs 2.4/kwH. Yet it has long been clear that this would only be true under completely unrealistic projections of the value of the rupee in relation to the dollar; and the price of the imported feed stock, be it naphtha or natural gas. Moreover, this would only be true at the very outset since there is an automatic escalation of price built into the tariff. The MSEB letter to U K Mukhopadhyay, secretary (energy), government of Maharashtra, of July 8, 1993 shows full awareness of the fact that the tariff would escalate dramatically.

Its first scenario assumes Rs 41.2/\$ in 1998, rising to Rs 45.2 in 2010. It further assumes the escalation of capacity charge at 4 per cent per annum, of oil price cif at \$ 4.51/MBTU in 1996, and gas price cif at \$ 3.8/MBTU in 1998 and escalation on oil and

gas price at 3.5 per cent per annum. Under these circumstances, the tariff would work out to Rs 3.22 in 1998 rising to Rs 5.52 in 2010. The second scenario projects an exchange rate of Rs 50.5/\$ in 1998 and Rs 113.71/\$ in 2010. It therefore projects a tariff rising from Rs 3.95/kWh in 1998 to Rs 13.89 in 2010. The third scenario projects the rupee at Rs 41.2/\$ in 1998 and Rs 45.2 in 2010. Consequently, it projects the tariff rising from Rs 3.03 to Rs 5.21. The fourth scenario assumes Rs 41.2/\$ in 1998 to Rs 45.2 in 2010. As a consequence it projects Rs 2.77/kWh in 1998 and Rs 4.74 in 2010. The fifth scenario assumes Rs 41.2/\$ in 1998 and Rs 45.2 in 2010. It therefore projects Rs 3.3/kWh in 1998 rising to Rs 5.64/kWh in 2010. The last scenario assumes Rs 50.5 as the exchange rate for the US\$ in 1998 and Rs 113.71 in 2010. It therefore, projects a tariff of Rs 4.04/kWh in 1998 rising to Rs 14.19/kWh in 2010.

The fact that the MSEB, the government of India and the government of Maharashtra considered this range of options shows clearly that they realised the truly high cost of Enron's power – and then went along with it.

The earlier suit of the state of Maharashtra filed against Enron drawn up by Nitin Pradhan and Prashant Bhushan and settled by senior counsel F S Nariman, said: "It has now come out that the whole object of the First Defendant was to gain maximum advantage to itself by the said Project at the cost of the Indian public. It was *inter alia* decided by the said Enron to divest 20 per cent to 30 per cent equity holding in First Defendant to one New Orleans based company called Energy Court at a high premium straightaway which would result in the said Enron making a substantial profit."

Yet, a subsequent amendment of the original circular of the ministry of power, SO 251 (E) dated March 30, 1992, was made on January 13, 1995. That amendment stated that: "premium raised by the Generating Company while issuing share capital and investment of internal resources created out of free reserve of existing company, if any, for the funding of the project, shall also be reckoned as paid up capital for the purpose of computing the return on equity, provided such premium amount and internal resources are actually utilised for meeting the capital expenditure of the power generation project and forms part of the approved financial package as set out in the techno-economic clearance accorded by the Authority." Clearly that would not be the intention of Enron should it have farmed out this equity – since the nature of the agreement is that all costs are covered and returns assured in the tariff, including extraordinary profits.

AMENDED PPA

The amended power purchase agreement (PPA) which the MSEB has just concluded with Enron Development Corporation's Dabhol Power Company raises interesting issues.

The original PPA provided that DPC would be paid by the capacity made available to the Board – whether or not that power was consumed. But the norm has been payment for the plant load factor (PLF) – for the

power actually generated. A fundamental error had been made in negotiating an agreement with DPC for a *baseload* plant. Since it would be fuelled by naphtha and eventually by imported natural gas, DPC would be the most expensive supplier of power in this state to the grid. All other depreciated plants based on either hydroelectric power or coal would sell electricity at far lower prices.

DPC should instead have been a *peaking* power station which MSEB could turn to

TABLE 2: FUEL OIL-BASED POWER PLANTS – UPPER CASE

Power Producer	1997-98	1998-99	1999-2000	2000-01	2001-02
TPS Obra Uttar Pradesh	35	35	35	35	35
UPSEB Harduaganj, Uttar Pradesh	18	18	18	18	18
BTPS Badarpur, Haryana	6	6	6	6	6
GNTP Bhatinda, Punjab	16	16	16	16	16
TPS Paricha, Uttar Pradesh	8	8	8	8	8
TPS Singrauli	16	16	16	16	16
TPS Rihand, Punjab	7	7	7	7	7
TPS Ropar, Punjab	27	27	27	27	27
HSEB Faridabad, Haryana	4	4	4	4	4
TPS Panipat, Haryana	55	55	55	55	55
RSEB Kota, Rajasthan	19	19	19	19	19
NTPC Unchahar, Uttar Pradesh	5	5	10	10	10
DESU, Delhi	53	53	53	53	53
NTPC Dadri, Uttar Pradesh	17	17	17	17	17
KTPS Kota, Rajasthan	29	29	29	29	29
HWP Rawatbata, Rajasthan	60	60	60	60	60
Control and Switch Gear, Haryana	0	0	140	140	140
India Power Project, Uttar Pradesh	0	140	140	140	140
HSEB Yamunanagar, Haryana	0	0	0	0	50
RPG, Noida, Uttar Pradesh	0	160	160	160	160
RSEB Suratgarh, Rajasthan	0	0	10	10	10
Magnum, Gurgaon, Haryana	0	0	30	30	30
DCW Kundli, Haryana	180	180	180	180	180
DCW Mohingarh, Haryana	180	180	180	180	180
DCW, Faridabad, Haryana	180	180	180	180	180
DCW Jodhpur, Rajasthan	180	180	180	180	180
DCW, Ambala, Haryana	180	180	180	180	180
DCW, Gurgaon, Haryana	180	180	180	180	180
DCW Abu Road, Haryana	180	180	180	180	180
Lupin Laboratory, Rajasthan	150	150	150	150	150
Ginni Filaments, Luki, Uttar Pradesh	160	160	160	160	160
Phoenix Overseas, Haryana	0	240	240	240	240
RPG, Rajasthan	160	160	160	160	160
RPG, Haryana	160	160	160	160	160
Subhash Projects, Uttar Pradesh	0	240	240	240	240
Indo Gulf, Roja, Uttar Pradesh	0	0	0	0	0
CTPS, CPR, Assam	32	32	32	32	32
ASEB, CPR, Assam	85	85	85	85	85
BTPS Salakati, Assam	8	8	8	8	8
BTPS Barauni, Bihar	20	20	20	20	20
NTPC, Farakka, West Bengal	37	37	37	37	37
NTPC Kahalgaon, Assam	40	40	40	40	40
DTPS Durgapur, Bihar	7	7	7	7	7
PTPS, Patratu, West Bengal	10	10	10	10	10
MTPC Kanti, Orissa	19	19	19	19	19
NTPC Kaniha, Orissa	16	16	16	16	16
TTPS Talcher, Orissa	24	24	24	24	24
DVC Mejia, Bankura	12	14	14	14	14
IIPS Expan (NTPC) Talchar, Orissa	18	18	18	18	18
AFC Transpower, Assam	0	12	12	12	12
Kaligan Power Corporation, Dhuburi Orissa	0	10	10	10	10
Bomlai Thermal, Bimlai, Orissa	0	0	10	10	10
CEPA Hirma, Orissa	0	0	36	36	36
Lapang Thermal Station, Orissa	0	0	0	12	12
LB Valley Naraj Thermal Power, Orissa	0	12	12	12	12
WBSEB, Bakreshwar, West Bengal	0	12	12	12	12

(Contd)

TABLE 2: (Contd)

Power Producer	1997-98	1998-99	1999-2000	2000-01	2001-02
GEB Dhuwaran, Gujarat	760	760	760	760	760
GEB, Ukai, Gujarat	70	70	70	70	70
GEB, Gandhinagar, Gujarat	24	24	24	24	24
GEB Wanakbori, Gujarat	70	70	70	70	70
AECO, Ahmedabad, Gujarat	15	15	15	15	15
NTPC, Waidhan Gujarat	12	12	12	12	12
MPEB Sarani, Madhya Pradesh	80	80	80	80	80
MPEB Dhari, Madhya Pradesh	18	18	18	18	18
MPEB Korba, Madhya Pradesh	20	20	20	20	20
NTPC, Korba, Madhya Pradesh	8	8	8	8	8
MSEB, Koradi, Maharashtra	25	25	25	25	25
MSEB, CPR, Maharashtra	40	40	40	40	40
MSEB, Kaperkheda, Maharashtra	10	10	10	10	10
Tata, Maharashtra	1050	1050	1050	1050	1050
MSEB, Nasik, Maharashtra	18	18	18	18	18
MSEB, Bhusaval, Maharashtra	16	16	16	16	16
MSEB, Paras, Maharashtra	3	3	3	3	3
MPEB Chachai, Madhya Pradesh	16	16	16	16	16
MSEB Parli, Maharashtra	23	23	23	23	23
Global Board, Madhya Pradesh	110	220	220	220	220
DCW Power, Mandide, Madhya Pradesh	0	60	120	240	240
SP Power, Pithampur, Madhya Pradesh	0	240	240	240	240
GVK, Ratlam, Madhya Pradesh	0	110	220	220	220
National Steel Industries, Indore, Madhya Pradesh	10	20	20	20	20
Hira Ferro Alloy, Raipur, Madhya Pradesh	0	20	30	33	33
Rama News Print, Gujarat	36	36	36	36	36
Ruchi Soya, Madhya Pradesh	0	40	40	40	40
Gujarat Flouro Chem, Gujarat	200	200	200	200	200
Woolworth, Raipur, Madhya Pradesh	20	20	20	20	20
Tips Tuticorin, Tamil Nadu	30	30	30	30	30
MTPP Metturdam, Tamil Nadu	5	5	5	5	5
NLC Neyveli, Tamil Nadu	59	59	59	59	59
HWP Manuguru, Andhra Pradesh	25	25	25	25	25
KTPS Polancha, Karnataka	18	18	18	18	18
RTPS, Raichur, Karnataka	10	10	10	10	10
KEB Yallahanka, Karnataka	135	135	135	135	135
VTPS Ibrahimpur Kerala	25	25	25	25	25
RTPS Kalkamalla, Kerala	18	18	18	18	18
Rayalaseema TPS, Andhra Pradesh	12	12	12	12	12
NMTPS Madras, Tamil Nadu	80	80	80	80	80
NTPC Ramagundam, Andhra Pradesh	7	7	7	7	7
ETPS Ennore, Kerala	6	6	6	6	6
MTPS Madras, Tamil Nadu	0	0	0	0	0
GMR Vasavi, Tamil Nadu	370	370	370	370	370
ESSAR Pellitisation AP	60	60	60	60	60
CRL, Kerala	0	0	0	450	800
Cogentrix, Karnataka	0	48	48	48	48
KSEB Bhramapuram, Kerala	170	170	170	170	170
KIOCL, Karnataka	180	180	180	180	180
Green View Power, Vzr, Andhra Pradesh	0	36	36	36	36
KSEB Kozhikode, Kerala	180	180	180	180	180
RPG Kasargode, Kerala	90	90	90	90	90
Trishakti Energy, TN	10	10	10	10	10
Subhash Project, Karnataka	0	60	60	60	60
Jindal Ferro Alloy, Vzr, Andhra Pradesh	21	21	21	21	21
Imperial Power, Karnataka	0	60	60	60	60
KIOCL, Kudremukh, Karnataka	180	180	180	180	180
KSEB, Kasargod, Kerala	90	90	90	90	90
Surya Chakra Power Corpn, Vzr, Andhra Pradesh	0	200	200	200	200
DLF Power, Vzr, Andhra Pradesh	0	80	80	80	80
Astha T and I, Vzr, Andhra Pradesh	0	45	45	45	45
Future Power, Vzr, Andhra Pradesh	0	45	45	45	45
Aban Lloyd, Kerala	0	175	175	175	175
Kesoram Cement, Vzr, Andhra Pradesh	0	20	20	20	20
Western India, Kerala	25	25	25	25	25
Sri Royal Seema, Bel, Karnataka	0	48	48	48	48
SPIC Elec Power, Tamil Nadu	0	0	15	15	15
WL Services, Kozhikode, Kerala	0	251	25	25	25
Total	7052	9372	9976	10563	11023

during periods of high demand, such as the daytime during the week when it would need to purchase power from every available source. At night and periods when factories and offices would be closed and even domestic consumption would fall sharply, the State Electricity Board should rationally rely upon cheaper providers of power – 'baseload demand'. Only at peak times when power would be necessary at any price – since the alternative would be to not supply consumers electricity – should the Board buy power from an expensive peak load station.

MSEB committed itself to paying for the mere availability of 625 MW – 90 per cent of DPC's available capacity – even if did not consume that power. So a major distortion creeps into the entire administration of the grid. MSEB must first use DPC in preference to cheaper suppliers of electricity. So the average cost of MSEB power will rise dramatically. This is passed on to the ultimate consumers.

The new Shiv Sena-BJP state government came to office and repudiated that PPA. But it subsequently negotiated an amended power purchase agreement. Three significant changes were made. First, it kept intact the original commitment for the purchase of 625MW baseload power from Phase I, at the original tariff. Second, DPC agreed to supply an additional 70MW of power as part of the baseload capacity of the plant. Third, it committed itself to a 'Phase II' of this project, permitting DPC to set up a vastly expanded capacity and committing itself to the purchase of that power on a backloaded dollar denominated tariff expressed in 'real rupees' and 'nominal rupees' similar to the one signed by the earlier government. Only once the new plant was set up would the new tariff – an average of Phase I and Phase II tariffs – come into effect.

WHAT SHOULD HAVE BEEN DONE?

A lower price for power should have been negotiated for the first phase of the plant. Phase I should have been renegotiated as a peaking power station. And a significantly lower price should have been negotiated for Phase II. No agreement had yet been reached on that phase. Phase II should have been renegotiated as a peaking power station. The shifting of 70MW of capacity in the first phase of the project from the peakload to the baseload has simply increased the high cost baseload burden on the MSEB. This is by no means free power. The cost of this 70MW is simply passed through in the tariff.

DPC will not be required to make major investments to modify the plant. An engineer involved with these negotiations points out that an interesting amendment to the PPA may permit it to increase capacity at virtually

no capital investment – but lower efficiency and therefore higher operating cost – which will have to be borne by MSEB not DPC.

MSEB will now have to make a, higher net payment, although at a lower unit rate. Under Schedule 7, 'Capacity Test Procedures', Section 2, the original definition of 'base load' was "the operation of the Frame 9FA combustion turbines at rated exhaust temperature on the vendor's exhaust gas temperature curve for the given inlet air temperature." This has been amended in the new agreement to be defined as "the operation of the Frame 9FA combustion turbines at rated exhaust temperature on the vendor's exhaust gas temperature curve for the given inlet air temperature plus, after Entry into Commercial Service of Phase II, duct firing of the heat recovery steam generators" (emphasis added).

The original design for Phase I was 209FA (signifying two separate 9FA gas turbines and one steam turbine totalling 635MW for baseload) and 1 FR#6 gas turbine with duct firing providing 70MW for peaking. For Phase II, two additional similar blocks of 209FA of 635MW each totalling 1270 each were envisaged for baseload; and an additional 70MW of peaking power through duct firing.

Under the revision, the same expert points out, DPC will provide for Phase-I an uprated version of 9FA gas turbines to provide a capacity of 670MW instead of 635MW (though actual capacity may be 679MW) from the blocks of 209FA; and two more similar blocks for Phase-II, resulting in 670MW+670MW+670MW = 2010+105 (35+35+35 from duct firing which has been shifted from peak load to base) = 2115MW (ref: Schedule, Annexure 1.1).

The actual capacity can be 679x3=2037+105=2142MW. DPC will add 8MW of duct firing to provide 2150MW. As a consequence, for a limited investment fully recovered from the tariff – and higher operating costs because of the shift of some of the capacities from peak load to base load – DPC is able to show additional capacity.

CAPITAL COST NOT FIXED

Because the capital cost has not been fixed – as it is in the case of the other negotiated independent power producers (IPP) – there is no achievement in an additional amount of power production for the same project. An additional 70MW in the case of one of the IPPs would be a significant bonus to the SEB because there would be no increase in the capital cost – and yet would be an increase in the capacity. No additional capital costs are recoverable by the IPP from the SEB; only variable costs such as additional fuel required. But in DPC's case the capital cost has not been fixed and therefore, both the

fixed capital cost, and all variable costs are simply passed through in the tariff payable by the SEB.

The Rupee Debt Service Charges were brought down; so the original definition in the agreement of the rupee capital recovery (RCR) from the date of entry into commercial service of Phase I until the end of the year of entry into commercial service of Phase I was modified. The original formula read: $RCR_{\text{Recs}} = RDS1/ecs/(6,25,000 * n)$ where 'n' is the inclusive number of hours between the date of entry into commercial service of Phase I and the last day of the year of entry into commercial service of Phase I.

This equation was modified by increasing the denominator and bringing down therefore the rupee capital recovery value as a component of the tariff. The amended equation reads: $RCR_{\text{Recs}} = RDS1/ecs/(6,70,000 * n)$. Yet this marginal reduction achieved in the renegotiation in the Rupee Debt Service charges may well be offset by the increase in revenues to DPC because of a significantly increased volume in sale of power.

'ENERGY PAYMENTS'

But a reduction has been negotiated in various fees payable to DPC. Schedule 10 of the power purchase agreement is 'Energy Payments'. This deals with calculations of fuel price, delivered energy payments, take or pay adjustments, O and M payments. Part IV of this deals with fees payable to DPC by MSEB: testing fees and special operation fee, fuel operations fee and commissioning fuel fee. Now these have all been reduced. The amended contract says: "each of the fees set out above are 1997 prices and shall be subject to indexation in each year thereafter by reference to the following formula". This formula it sets out, so that these fees keep increasing as time goes out. Under Testing Fee and Capital Operations Fees is said: "the following fees shall be payable by MSEB and included in the Energy Payments in respect of the month in which the relevant test or operations is carried out." The Capacity Test amounted to \$ 50,000. Now this has been brought down to \$ 47,500.

"Hot Starts required because of an event or circumstance of Political Force Majeure or reasons attributable to MSEB including Despach Instructions" have been lowered. The new renegotiated fee is stated in brackets:

Fuel/Generating Unit	Natural Gas	Distillate
Frame 9FA		
Gas Turbine	\$ 9,990 (9,490)	\$ 10,429 (9,907)
Steam Turbine	\$ 4,956 (4,708)	\$ 5,015 (4,764)
Frame 6 Gas Turbine	Zero	Zero

Likewise, "Cold Starts required because of an event or circumstance of Political Force Majeure or reasons attributable to MSEB including Despach Instructions" have been lowered (the new renegotiated fee is stated in brackets):

Fuel/ Generating Unit	Natural Gas	Distillate
Frame 9FA Gas Turbine	\$ 14,261 (13,548)	\$ 15,307 (14,541)
Steam Turbine	\$ 11,629 (11,047)	\$ 12,126 (11,519)
Frame 6 Gas Turbine	Zero	Zero

The basic question is whether these fees should have been concocted as an item for special payment; and charged to the tariff in the first place? The negotiating team must justify their very validity.

COMPETITIVE BIDDING

It was well known that no competitive process had been instituted for Phase I of DPC for the procurement of plant and equipment. The Re-negotiation Committee failed to ensure competitive tendering for Phase I of the project; but announced that competitive tendering would prevail in Phase II. Where was the 're-negotiation' in this? Yet what seemed a very modest achievement turns out not even to be so. The Agreement says: "The arrangements for acquisition of Major Equipment to be used in the construction of Phase II shall be made on the basis of a competitive tendering process..."

And what is this process? "...DPC and MSEB shall jointly determine the identity of the successful bidder as follows. DPC shall make a provisional determination of the successful bidder and shall notify MSEB in writing of the identity of such bidder, together with the basis on which the determination was made and any relevant supporting documentation. If MSEB has not raised any objection to such determination, together with its reasons for such objections, within eight business days of receipt of DPC's provisional determination, DPC is entitled to serve a further notice on MSEB requiring it to concur in such determination. If MSEB fails to raise an objection to the determination, together with reasons as mentioned above, within two further business days from receipt of such further notice, the successful bidder determined by DPC shall be deemed to have been jointly determined."

Clearly MSEB has only a right to object. But DPC has effective control of the process of evaluation.

A power producer may have private arrangements with suppliers of equipment and machinery to ensure they are awarded contracts for its projects which are simply

passed through to the SEB and reflected as an element of the tariff.

The solution may be to negotiate the capital cost at the outset; and to stipulate competitive bidding for contracts. The apprehension was especially acute in the case of DPC. Enron has made the contractors Bechtel and General Electric significant equity holders. This ensures that they have a stake and are in a position to lobby for the most attractive terms to themselves. The Renegotiating Committee set itself the task of ensuring that goods and services would be locally sourced. But DPC has not been compelled to source locally. Nor is there a significant penalty to compel it to do so. Instead there is a mere recommendation; and a bonus to DPC should it do so. This may not compare with the extraneous advantages to DPC shareholders and the promoters in their separate capacity of awarding the plant and equipment contracts to themselves.

The revised clause reads: "6.1(d) DPC shall use all reasonable endeavours to source in India consumables and other goods and services required for the operation and maintenance of the Power Station with a target of sourcing 30 per cent in value of such goods and services in India by the third anniversary of Entry into Commercial Service of Phase I and increasing such percentage by 10 per cent per year thereafter up to a maximum of 80 per cent. Upon the third anniversary of Entry into Commercial Service of Phase I and at two-yearly intervals thereafter the parties shall carry out a joint review of the result of such endeavours. If and to the extent that, on the basis of such review, the parties determine that DPC has been able to increase the ratio of India to foreign-sourced goods and services, (i) in the case of goods and services for which DPC is reimbursed by way of the Fixed O and M Charges referred to in Schedule 9, above the ratio of the Rupee Fixed O and M Charges to the Real Rupee Fixed O and M Charges; or (ii) in the case of goods and services for which DPC is reimbursed by way of the Variable O and M Payment referred to in Schedule 10, above the ratio of \$ VOMC to RVOMC there shall be a fair and reasonable adjustment to the relevant charge to reflect such increased ratio to be agreed between the parties and in default of agreement determined by the Expert." No obligation to limit the project cost. Only best efforts.

The government of India's guidelines for independent power projects permit only 1 per cent of project cost as insurance for the first year of commercial operation. Yet according to Schedule 9, part IV of the PPA, the insurance for Phase I is fixed in dollar terms at 1997 prices. But it is subject to US inflation escalation. Insurance will be calculated according to the actual date of

commissioning. This could exceed the norms laid down in the guidelines. This dollar-denominated premium raises the question of whether DPC intended to insure this project in India or abroad. The Indian Insurance Act proscribes insuring overseas by an Indian company save in case of overseas projects, the import of plant and machinery or marine insurance.

BOP CONSEQUENCE OF FUEL IMPORTS

Petroleum demand is set to increase sharply. The draft report of the IX Plan Group on Demand Projections for the Petroleum Sector has estimated that it could go up from 81 million tonnes in 1996-97 to as much as 146 million by 2001. Nearly half this increase will come from oil-based power plants set up under the new policy. Although international oil majors see this as good news, they may not have considered India's ability to pay. Oil imports could well precipitate the next balance of payments crisis – and a sharp decline in the rate of growth.

Petroleum products today account for 20 per cent – \$ 7.3 billion – of India's \$ 36.37 billion of imports. In 1996-97 the oil import bill is expected to reach \$ 9.5 billion, according to the Oil Co-ordination Committee (OCC) statement in a note sent to the finance ministry for its budget exercises. This is expected to rise by 300 per cent over the next five years to \$ 20 billion. By 2001 the value of petroleum imports could even go up to \$ 30 billion if insufficient refining capacity is available and petroleum must be imported not as crude but as products. India's total imports, oil and non-oil, could go up to \$ 80 billion if the present trend is maintained.

The Draft Report of the Oil Co-ordination Committee's Sub Group of the Planning Commission's Demand Projections for the Petroleum Sector has estimated that the demand for petroleum products will rise in the years from 1996-97 to 2001-02 from 80.88 million to 119.857 million tonnes. On the other hand, this looks far too conservative. A more realistic projection would take into account those power projects which have been proposed and which have already applied to the ministry of petroleum and natural gas for permission to import naphtha. In this upper case (as we shall call it hereafter to distinguish it from the base case) – considered but subsequently rejected by the Planning Commission as being too alarming – products have been projected to increase from 83.457 million tonnes, which it is assumed will be consumed in 1996-97, to 146.818 million tonnes in 2001-02. The increases in the demand for naphtha, diesel, fuel oil, motor spirits and liquefied petroleum gas (LPG) are significantly responsible.

Fuel oil accounts for 14.85 per cent of the projected total volume of imports of petroleum products in 2001-02 and is expected to grow at 5.5 per cent annually from 12.035m tonnes in 1996-97. Naphtha/natural gas liquids demand is expected to grow at 7.8 per cent annually from 5041m tonnes this year to 29.890m tonnes in 2001-02 to comprise 20.35 per cent of total petroleum products consumed by volume. Naphtha and fuel oil together comprise a little over 35 per cent by volume of total petroleum products demand. The new power plants have accelerated the consumption of naphtha and fuel oil following the government's decision to encourage generation from hydrocarbon fuels.

India is increasingly dependent on hydrocarbon products, though it has vast reserves of coal.

Power plants will account for 28.973 mn tonnes of naphtha and fuel oil, contributing substantially to the increase. In the case of naphtha, the base case projects 11.207 million tonnes for 2001-02, while the upper case projects 29.890 million tonnes and therefore a much higher growth rate. To give an idea of when this will happen, the upper case projects a sudden jump between 1997-98 and 1998-99, from 9.318 mn tonnes to 17.924 mn tonnes, and an increase to 25.708 mn tonnes in the following year. There is an increase of 18.68 mn tonnes over the base case. Nearly all of that, 17.95 mn tonnes, is accounted for by the impact of the proposed naphtha requirement for new power plants. In fuel oil, the lower case assumes an increase from 12.035 mn tonnes to 15.654 mn tonnes. But the upper case projects that this will go up instead to 21.803 mn tonnes by 2001-02. Again power is the largest component in the upper case of demand for fuel oil – 11.023 mn tonnes out of 21.803 mn tonnes or more than half – compared to 5.413 mn tonnes out of 15.654 mn tonnes, about a third, in the lower case.

The higher case takes into account naphtha based projects such as the IPP demand for 6,75,000 tonnes of naphtha annually in Rajasthan, or RPG Dholpur's demand for 1.1 mn tonnes of naphtha, or Alpine's demand for 5,00,000 tonnes at Rajgarh, or Enron Dabhol's requirement of 1 mn tonnes of naphtha, RIL Patalganga's 7,50,000 tonnes or Ensearch's requirement of 4,00,000 tonnes in Kerala. Ib Valley in Orissa will consume 3,00,000 tonnes annually, AEC in Gujarat, 3,10,000 tonnes, Kedia in Jhabua in Madhya Pradesh, 3,80,000 tonnes, STI Guna Thermal Power Station in Madhya Pradesh will require 5,00,000 tonnes annually, Subhash at Khandwa in Madhya Pradesh will require 2,40,000 tonnes, TEC at Bhivpuri in Maharashtra will require 3,00,000 tonnes, Nippon Denro at Pen in Maharashtra will require 3,00,000 tonnes, Kalyani Steel in

Pen Maharashtra will require 3,00,000 tonnes, NTPC at Hyderabad in Andhra Pradesh will require 7,50,000 tonnes, Kannur Power in Kerala will require 7,50,000 tonnes, RPG in Kerala will require 9,00,000 tonnes, Kumar Energy in Kerala will require 5,22,000 tonnes, Karnataka State Electricity Board's new project will require 4,20,000 tonnes, Whitefield in Karnataka will require 3,00,000 tonnes, Palakkad in Kerala will use 1,200,000 tonnes, and BPL at M'swar in Kerala will require 7,00,000 tonnes (Table 1).

Even the base case assumes that the important naphtha-based power projects will be set up. These include the Essar Bhandar project in Madhya Pradesh which should account for 4,00,000 tonnes of naphtha annually, NTPC at Kawas in Gujarat which will consume 2,80,000 tonnes, Essar Power in Gujarat which will consume 5,50,000 tonnes, NTPC Gandhar at Gujarat which will consume 2,00,000 tonnes, GTEC at Bharuch in Gujarat which will consume 2,00,000 tonnes, DMPC in Tamil Nadu, 4,20,000 tonnes and NTPC at Kayamkulam in Kerala, 4,50,000 tonnes.

Fuel oil-based power projects include GEB Dhuwaran in Gujarat (7,60,000 tonnes), Tata Power, Maharashtra (1,050 mt), DCW Power, Madhya Pradesh (2,40,000 tonnes) and CRL, Kerala (8,00,000 tonnes) and Aban Lloyd, Kerala (1,75,000 tonnes), UP State Electricity Board at Pratapur (1,60,000 tonnes), UPSEB at Anpara (1,00,000 tonnes), DCW at Kundu in Haryana (1,80,000 tonnes), DCW at Mohingarh in Haryana (1,80,000 tonnes), DCW at Faridabad in Haryana (1,80,000 tonnes), at Jodhpur in Rajasthan (1,80,000 tonnes), in Ambala, Haryana (1,80,000 tonnes), in Gurgaon, Haryana (1,80,000 tonnes), in Abu Road in Rajasthan (1,80,000 tonnes), Lupin in Rajasthan (1,50,000 tonnes), Ginni Filaments at Luki in UP (1,60,000 tonnes), Phoenix Overseas in Haryana (2,40,000 tonnes), RPG in Rajasthan (1,60,000 tonnes), RPG in Haryana (1,60,000 tonnes), Subhash Projects in UP (2,50,000 tonnes), Global Board in Madhya Pradesh (2,20,000 tonnes), DCW Power in Mandide in Madhya Pradesh (2,50,000 tonnes), SP Power in Madhya Pradesh (2,40,000 tonnes) and GVK at Ratlam in Madhya Pradesh (2,40,000 tonnes).

Kerosene is widely used as a domestic fuel. At 12,192m tonnes, it accounts for 8.30 per cent by volume (projected) of total petroleum products consumed in 2001-02, growing at 4.7 per cent annually from 10,517 in 1996-97. Yet this fuel of the poor is not expected to be either a high growth product nor will it make such an impact on the balance of payments. The subsidies paid in kerosene distribution have been declining, from Rs 37,730 million 1993-94 to Rs 37,400 million in 1994-95. They are expected to be

frozen under the new petroleum policy, as the government attempts to 'target the truly needy' under the public distribution system of ration shops. This is really an exercise in futility. As even government studies bear out, the poor simply pay more for kerosene because they have to, and spend less on other essentials. The Planning Commission has noted the trend that: "all POL products are continuously becoming less price elastic... more like essential commodities and an item of utmost necessity. With respect to per capita consumption, MS is a more elastic petroleum product followed by HSD and SKO (domestic kerosene). Relative price

elasticity of SKO is seen decreasing continuously from 0.196 in 1984-85 to 0.103 in 1994-95... income elasticity of SKO (log-log estimate of per capita SKO consumption vs its real prices indices and private final consumption) is 1.36... low price elasticity of SKO seems to be due to fact that SKO is being consumed in small quantities by a large number of consumers for whom the product is a necessity. Thus pricing of petroleum products may not remain an effective policy tool for reduction of their net consumption by substitution with other forms of energy or efficient utilisation."

Indian Institute of Public Administration New Delhi

ESSAY COMPETITION ON THE OCCASION OF WORLD FOOD SUMMIT 1996

It gives us great pleasure to announce an all-India Essay competition (sponsored by the Ministry of Food, Government of India) on the occasion of the World Food Summit on the following topics.

- (1) Food Security: India's Quest for Self-Reliance in Food.
- (2) Fight Against Hunger.
- (3) Good Security in a Borderless World.

Original essay on any one of the above topics should be based on personal study/research/experience of the competitors and should be written in English. The entries (of about 5000 to 7000 words and neatly typed in double space on one side of the paper only) should be submitted in triplicate under a **Nom de Plume**. Full name and address of the competitor should be given on a separate sheet and enclosed in a sealed envelope bearing on the outside the **Nom de Plume**. All essays should be sent to Professor Kamal Nayan Kabra, Indian Institute of Public Administration, Indraprastha Estate, New Delhi-110 002 by registered post so as to reach us by October 4, 1996. The envelope should be marked "**ESSAY COMPETITION – WORLD FOOD SUMMIT 1996**".

The value of one First Prize is Rs. 10,000/-, Two Second Prizes of Rs. 5000/- each and Four Third Prizes of Rs. 2500/- each. The essay will be adjudged by a body of judges selected by the IIPA. The award of the judges shall be final and no correspondence on this matter will be entertained. The Institute reserves the right not to make any award if none of the essays submitted reaches the necessary standard.