

(b) if not, the reasons therefor and the steps being taken to improve the situation;

(c) whether the Government propose to retrench the workforce from the coal industry;

(d) if so, the details thereof and how many are likely to be retrenched;

(e) whether the Government plan to deploy them in other fields; and

(f) if so, the details thereof?

THE DEPUTY MINISTER IN THE MINISTRY OF COAL (SHRI S.B. NYAMAGOUDA): (a) and (b). In order to ensure loading of uniform size of coal, free from extraneous material, coal handling plants are being provided at loading points. Coal India is now laying great stress on quality control. Complaints received from consumers are monitored and corrective measures taken. The supervision of wagon loading at the collieries has also been tightened and Power Utilities are being offered the facility for supervising the loading at the loading point itself.

(c) No, Sir.

(d) to (f). Do not arise.

Research Works by C.S.I.R.

2392. SHRI SHANKERSINH VAGHELA:
SHRI ATAL BIHARI VAJPAYEE:
SHRI UDDHAB BARMAN:

Will the PRIME MINISTER be pleased to state:

(a) the details of Research Laboratories, Centres, Scientists and other employees engaged in the Council of Scientific and Industrial Research; and the total annual expenditure incurred by CSIR alongwith the overall investment in its assets;

(b) the details of industries and their products which have used CSIR's industrial research findings as yet in the field of Physics; Chemistry; Biology; Engineering; Drug; Information Science and others;

(c) the details of Research Papers produced so far and how many of them found place in journals of international repute;

(d) when the suggestions of attach CSIR's Research Laboratories and centres either to the related Ministries or to various Universities were considered and the details of the outcome therefrom; and

(e) the efforts made to attach some research laboratories/centres to R&D wings of certain institutions/industries or universities?

THE MINISTER OF STATE IN THE MINISTRY OF PERSONNEL, PUBLIC GRIEVANCES AND PENSIONS (SHRIMATI MARGARET ALVA): (a) The details of the Research Laboratories/Centres are given at 'Annexure-1'. The other requisite details are:-

I. Manpower

a. Scientists	6000	(approximately)
b. Other Technical Staff.	13,000	(approximately)
c. Administrative staff	5,700	(approximately)

II. Total expenditure during 1990-91

Rs. 308.05 crores

III	Expenditure during 1991-92 (estimated)	Rs. 339.63 crores
IV	Investment in fixed assets as on 31.3.1991	Rs 655.20 crores

(b) Over 1800 processes/knowhow from the CSIR laboratories have been licensed to industry till date, of which nearly 45% have been commercially utilised. Details of some of the important CSIR knowhow utilised by the industry are given at the 'Annexure-II'

(c) Of the 9451 research papers published during the last 5 years, 5830 papers were in the journals of international repute

(d) and (e) In pursuance of the decision of the Union Cabinet, CSIR Society in its meeting held on 23rd November, 1977 decided to transfer 4 CSIR laboratories, namely Central Road Research Institute, New Delhi, Central Powdering Research Institute, Roorkee, Central Fuel Research Institute, Dhanbad and Indian Institute of Petroleum, Dehradun to the related Government Ministries/Departments w.e.f. 1.4.1978 on an experimental basis. These laboratories were, however, brought back to the CSIR fold subsequent to a decision of the Union Cabinet considered

by the CSIR Society at its meeting held on 15th December, 1980. The retransfer was based on the fact that S & T activities could be more effectively structured in an autonomous frame-work

The CSIR Review Committee appointed by the prime Minister in his capacity as President, CSIR in 1986 has also recommended transfer of some of the CSIR laboratories to the concerned Government Scientific Departments. The CSIR Society however, decided to retain these laboratories in the CSIR system and recommended a revised organisational structure providing for adequate representations of the respective Scientific Departments/Agencies on the various decision making bodies of the CSIR and its laboratories and thus a say in the planning, formulation and monitoring of the research programmes of the concerned laboratories to ensure proper coordination and accountability

STATEMENT-I

COUNCIL'S ESTABLISHMENTS

PHYSICAL AND EARTH SCIENCES GROUP

National Physical Laboratory, New Delhi	(NPL)
Central Electronics Engineering Research Institute, Pilani	(CEERI)
Central Scientific Instruments Organisation, Chandigarh	(CASIO)
National Geophysical Research Institute, Hyderabad	(NGRI)
National Institute of Oceanography, Dona Paula, Goa	(NIO)

CHEMICAL SCIENCES GROUP

National Chemical Laboratory, Pune	(NCL)
Central Electrochemical Research Institute Karaikudi	(CECRI)

Central Salt & Marine Chemicals Research Institute, Bhavnagar (CSMCRI)

*Indian Institute of Chemical Technology, Hyderabad (IIOT)

Regional Research Laboratory, Jorhat (RRL-Jorhat)

Indian Institute of Petroleum, Dehradun (IIP)

Central Research Institute, Madras (CLRI)

Central Fuel Research Institute, Jealora (CFRI)

BIOLOGICAL SCIENCES GROUP

Central Food Technological Research Institute, Mysore (CFTRI)

Central Drug Research Institute, Lucknow (CDRI)

National Botanical Research Institute (NBRI)

Indian Institute of Chemical Biology, Calcutta (IICB)

Central Institute of Medicinal & Aromatic Plants, Lucknow (CIMA;)

Industrial Toxicology Research Central, Lucknow (ITRC)

Centre for Cellular and Molecular Biology, Hyderabad (CCMB)

Regional Research Laboratory, Jammu (RRL-Jammu)

Institute of Microbial Technology, Chandigarh (IMTECH)

CSIR Complex, Palampur, HP (CSIR Comp.Palampur)

CSIR Centre for Biochemicals (CFB)

ENGINEERING SCIENCES GROUP

Central Building Research Institute, Roorkee (CBRI)

Central Road Research Institute, New Delhi (CRRRI)

Central Glass & Ceramic Research Institute, Calcutta (CGCRI)

National Metallurgical Laboratory, Jamshedpur (NML)

Central Mining Research Station, Dhanbad (CMRS)

Central Mechanical Engineering Research Institute, Durgapur (CMERI)

National Environmental Engineering Research Institute, Nagpur (NEERI)

National Aeronautical Laboratory, Bangalore	(NAL)
Structural Engineering Research Centre, Madras	(SERC-M)
Structural Engineering Research Centre, Ghaziabad	(SERC-G)
Regional Research Laboratory, Bhubaneswar	(RRL-Bhu)
Regional Research Laboratory, Trivandrum	(RRL-Triv)
Regional Research Laboratory, Bhopal	(RRL-Bhopal)

INFORMATION SCIENCE GROUP

Publications & Information Directorate, New Delhi	(PID)
Indian National Scientific Documentation Centre, New Delhi	(INSDOC)
National Institute to Science, Technology and Development Studies, New Delhi	(NISTADS)

STATEMENT I-II

Major/Important CSIR Knowhow utilised by Industry

Sl. No.	Industrial Unit/License	Technology/Knowhow	CSIR Laboratory
1	2	3	4
1.	PHYSICS		
1.1	<i>Electronics & Instrumentation</i>		
1	Bharat Electronics Ltd., Bangalore	1 KW Klystron	CEERI
2.	Mini Circuits P. Ltd., Bangalore	Hybrid microcircuits	CEERI
3.	Satwik Electric Controls P. Ltd. Nagik and 2 others	Microprocessor based pan monitoring system	CEERI
4	Andrew Yuie & Co. Ltd., Calcutta, and V K Industries, Pilani	Microprocessor based Monitoring system for mine winder	CEERI
5	Computer Controls, Ghaziabad and 2 others	Process control instruments for sugar industry	CEERI
6	Central Electronics Ltd., Jhbabad	150 KV Thyristor Converter	CEERI
7	Techsnwal Instrument Man. facturing Co., Aimer	— Digital Ph Meter — Digital Frequency Meter	CSIO CSIO
8.	Naina Electronics, Chandigarh	— Digital Panel Meter — Digital Ph Meter — Digital Multimeter — Dissolved oxygen Analyser	CSIO CSIO CSIO CSIO

Sl. No	Industrial Unit/Licencee	Technology/Knowhow	CSIR Laboratory
1	2	3	4
9.	National Instruments Ltd., Calcutta	Breath Alcohol Analyser	CSIO
10	Indian Ferrites Indus., Bangalore	Soft Ferrites	NPL
11	Ferrites & Electro Components, B'lore and Two other parties	Hard Ferrites	NPL
12.	Zindal Scientific Indus New Delhi and Shreyas Engg & Chemicals Indus, B'lore	Midget Electrodes	NPL
13	KLB Electronics, New Delhi	Microwave Components	NPL
14	Advanced Oerlikor P Ltd Bombay and three other parties	Projector Carbon	NPL
15	Systronics, Ahmedabad	Photocopying Machine	NPL
16	Saraf Electronic Appliances, Cochin	— Induction current meter	NIO
		— Tide and wave telemeter	NIO
17.	Geo Instruments, Hyd	— DC earth resistivity — PROTRON precision magnetometer — Seismic timer — Shallow EM prospecting unit	NGRI NGRI NGRI NGRI

Sl. No.	Industrial Unit/Licence	Technology/Knowhow	CSIR Laboratory
1	2	3	4
18.	Terra Science, Hyd.	— Proton precision magnetometer — DC earth resistivity meter	NGRI NGRI
II. CHEMISTRY BASED			
<i>2.1 Industrial Chemicals</i>			
19.	Bush Boake Allen India Ltd., Madras	Glyoxylic acid	CECRI
20.	Godavari Calcium Gluconate Chemicals Ltd., Hyderabad	Calcium Gluconate	CECRI
21	Eastern Naphtha Chemicals, Dhanbad	B-naphthol, Cressol, & Resorcinol	CFRI
22.	Kadwani Chemicals, Gondal	Precipitated silica	CSMCRI
23.	Parsin Chemicals Pvt. Ltd., Hyderabad	Sodium azide	IICT
23.	Rajasthan Glyoxal Ltd., Udaipur and two other parties	Glyoxal	IICT
24.	Hindustan Organic Chemicals, Rasayani	Butenediol	NCL
25.	Hindustan Polymers, Visakhapatnam	Ethyl benzene from ethyl alcohol & benzene	NCL
26.	Diamines & Chemicals Ltd., Kabul	Ethyl lenediamine	NCL

Sl. No.	Industrial Unit/License	Technology/Knowhow	CSIR Laboratory
1	2	3	4
27.	Hico Products Ltd., Bombay	— Methyl chlorosilanes — Monochloro Acetic Acide	NCL
28.	Maize Products, Ahmedabad	Sorbitol	NCL
29.	metoli Corporation, Jamshedpur	Metasave, Corrosion Inhibitor	NML
30.	IPCL, Vadodara	Ortho & Para Xylene	NCL
31.	Fast Bonds Pvt., Ltd., Bangalore	Cynocrylates Adhesives	ICT
2.2	Agro Chemicals		
32.	Hindustan Insecticides Ltd., New Delhi	— Butachlor — DDVP ICT — Endosulfan	ICT NCL
33.	Sudarshan Chemical Industries Ltd., Pune	— DDVP — Dianinon — Monocrotophos — f hosphamidon — Guinalphos	ICT ICT ICT RRL, Jt ICT & RRL, Jt
34.	National Organic Chemical Indus. Ltd. Bombay	— DDVP — Monocrotophos	ICT ICT

Sl. No. <i>Industrial Unit/License</i>	Technology/Knowhow	CSIR Laboratory
1	3	4
35. Shaw Wallace & Co. Ltd. Calcutta	— Dimethoate — Ethion	NCL IICT
2.3 <i>Petroleum Refining & Petrochemicals</i>		
36. BPCL, Bombay	Aromatic Extraction of naphtha for benzene and toluene	IIP
37. BPCL, Bombay	Food grade hexane	IIP
38. IPCL, Vadodara	Pyrolysis gasoline hydrogenation	IIP
39. ONGC, Dehradun & Several other parties	Lube oil refining	IIP
2.4 <i>Leather & Leather Auxiliaries</i>		
40. Balmer Lawrie Co. Ltd., Calcutta	— Alcodan & Alutan — Phosphorylated fat Liguor	CLRI
41. Allied Resins & Chemicals Ltd., Calcutta and Several other parties	Synthetic tanning Agents	CLRI
III. BIOLOGY		
42. A.V. Thomas & Co. Ltd., Madras and three other Parties	Plant Tissue Culture for cardamom	NCL

Sl. No.	Industrial Unit/License	Technology/Knowhow	CSIR Laboratory
1	2	3	4
43.	Bioproducts, B'lore & Twentyfirst Century Adroits, Haldia	BPPS (Plant growth regulant)	RRL, Jt.
44.	Dhampur Sugar Mills Ltd., New Delhi	Fermentation of Molasses	NCL
45.	Tata Tea Ltd., Munnar Kerala	Belladona cultivation	CIMAP
46.	S.H.Kekkar & Co. Ltd., Bombay	Lavendar cultivation & Processing	CIMAP
47.	Dr. Patani Scientific & Industrial Research, Bombay	Pyrethrum cultivation & Processing	CIMAP
48.	Govt. of Bhutan	Palmarosa cultivation	CIMAP
49.	Several Small Scale Farmers	Java Citronella	RRL, Jt.
IV.	ENGINEERING		
4.1	<i>Machinery & Plant</i>		
50.	Punjab Tractors & PSIDC, Chandigarh	Tractor (20 HP)	CMERI
51.	Greenfield Tractor, New Delhi	Rotiller	CMERI
52.	Bharat Heavy Plates & Vessels, Vizag and Titanium Equip. A Anoda Mfg. Co., Madras and Wimco Ltd. Bombay	Titanium Substrate insoluble anodes	CECRI

Sl. No.	Industrial Unit/Licensee	Technology/Knowhow	CSIR Laboratory
1	2	3	4
53.	Kutch Cement Pvt. Ltd., Kutch and several other parties	Vertical Shaft Kiln for cement manufacture	RRL, Jt
54.	Several Small Scale Units	— Hydraulic Props — Safari/quick setting clamps	CMRS
55.	Ganesh Traders, Latur & Dhoomdabri Steel Indus., Gazhiabad	Automatic brick moulding machine	CMERI
56.	Vijaya Sewing Pvt. Ltd., Calcutta	Industrial sewing & Automatic cloth cutting machine	CMERI
57.	Mcnelly Bharat Eng. Co., Calcutta	Cable stranding machine	CMERI
58.	Tool Craft, Bangalore	EDM-25 AMP	NAL
4.2 <i>Materials</i>			
59.	TISCO, Jamshedpur	Grip Bars	SERC (M)
60.	Jagadhatri Brick Indus., West Bengal and 10 others	Fly Ash Bricks	CFRI
61.	Sur Enamel & Stamping Works Ltd., Calcutta	Insulating bricks from rice husk ash	CGCRI
62.	Pile Engineers, Patna and 16 other parties	Piles, Bored Compaction	CBRI

Sl No.	Industrial Unit/Licensee	Technology/Knowhow	CSIR Laboratory
1	2	3	4
63.	Geotech Foundations and Construction, Cochin and two other parties	Piles, Skirted Granular	CBRI
64.	Indian Concrete Products, Ferroceement bins Meerut	Ferroceement bins	SERC,G
V.	DRUGS & PHARMACEUTICALS		
65.	CIPLA Ltd., Bombay	<ul style="list-style-type: none"> — Gugulipid — Vinblastine and vincristine sulphate — Ibuprofen — Azidothymidine (AZT) — Omeprazole — Etoposide — Norfloxacin IICT 	CDRI NCL NCL IICT IICT IICT
66.	Hindustan Latex Ltd., Trivandrum and Torrent Pharmaceuticals, Ahmedabad	Centchroman	CDRI
67.	FDC Ltd., Bombay	<ul style="list-style-type: none"> — Timolol maleate — Flubiprofen 	IICT IICT
68.	Cadilla Laboratories Ltd., Ahmedabadq	Gemfibrozil	IICT
69.	Lupin Laboratories.	Vitamin B ₆	IICT

<i>Sl. No.</i>	<i>Industrial Unit/Licensee</i>	<i>Technology/Knowhow</i>	<i>CSIR Laboratory</i>
1	2	3	4
70.	Wockhardt Ltd., B'bay	D-Propoxyphene HCl	CDRI
VI. INFORMATION SCIENCE			
6.1 <i>Computer Software</i>			
71.	SPB Projects and Consultancy, Madras	INFRAN (Interactive Frame Analysis)	SERC (M)
72.	Tuticorin Port Trust,	— INSPACE (Interactive Space Frame Analysis) — MICSTRAN (Microcomputer for analysis of turses, grid, and frame systems)	SERC (M) SERC (M)
VII. OTHERS			
7.1	Food		
73	KAIRA MILK Co-op Union Ltd., Kaira and APDDC, Hyderabad	Baby Food from Buffalo CFTRI Milk	CFTRI
74.	Delmia Dairy Industries, New Delhi	Optimised baby milk food	CFTRI
75.	Modern Food Industries Ltd., New Delhi	Cola Flavour blends	CFTRI
76.	Rasna Food Prods. P. Ltd., Udupi and 62 others	Instant Mixes-idli, Dosa, Vada, Jalaabi, Jamun, Sambhar, Rasam etc.	CFTRI
77.	Midland Fruit & Veg. (1) P. Ltd., New Delhi and 8 others	Liquid Fruits	CFTRI

Sl. No.	Industrial Unit/Licensee	Technology/Knowhow	CSIR Laboratory
1	2	3	4
78.	Kodegu Foods P. Ltd., Bangalore and several other parties	Tamarind Juice concentrate & powder	CFTRI
7.2 GLASS & CERAMICS			
79.	Indo Fogates Ltd., Calcutta and four other parties	Low Moisture castables	CGCRI
80.	Enamelnagar Development Corpn., Calcutta	Ceramic colors	CGCRI
81.	Hindustan Gypsum Indus, New Delhi and ten other parties	GRG composite board & plaster of paris	CGCRI
82.	Kumardhubi Fire clay & Silica Works Ltd., Calcutta and Six other parties	matt glazed tiles	CGCRI
83.	Bharat Ophthalmic Glass Ltd., Durgapur	New varieties of optical glass	CGCRI
84.	Piezoelectric Ceramics (1), New Delhi and Shilpi International, Nasik	Piezoelectric ceramic materials	NPL
7.3 MISCELLANEOUS			
85.	Strobel Industries	Speciality Papers — Thermographic — Correction — Direct Copy — Carbonless copy	RRL, Jt

Sl. No.	Industrial Unit/Licensee	Technology/Knowhow	CSIR Laboratory
1	2	3	4
86	Srinivasa Paper Industries, Hyd	Filter paper	IICT
87.	Prakash Chemical Labs., Pune	Gelatine optical filter	IICB
88	Mysore Lac & Paint Works Ltd., Mysore	— Indelible ink — Block stamp cancellation ink	NPL
89.	BHEL, Hyderabad	Reverse Osmosis desalination plant	CSMCRI
90.	Northern Biologicals, Farabed	Diagnostic kits	CFB
91.	Kirloskar Brothers, Pune	Rotating rope biological contactor	NEERI
92.	National Water Mission, New Delhi	Mobile water analysis van	ITRC
93.	L-Tek Systems, Nagpur	Water analysis kits including biological kit	NEERI
94.	SSK Plastics, Nagpur	Water analysis kits	NEERI
95.	Gudimani Enterprises, New Delhi	Chlorine tablets & ampoules	NEERI