NATIONS UNIES

EP

Programme des Nations Unies pour l'environnement

Distr.
GENERALE

UNEP/OzL.Pro/ExCom/56/34
15 octobre 2008

FRANÇAIS
ORIGINAL: ANGLAIS

COMITE EXECUTIF
DU FONDS MULTILATERAL AUX FINS
D'APPLICATION DU PROTOCOLE DE MONTREAL
Cinquante-sixième réunion
Doha, 8-12 novembre 2008

PROPOSITION DE PROJET : INDE

Ce document est composé des commentaires et des recommandations du Secrétariat du Fonds concernant la proposition de projet suivante :

Aérosol

• Stratégie nationale de transition vers les inhalateurs à doseur sans CFC et plan d'élimination des CFC dans la fabrication d'inhalateurs à doseur pharmaceutiques	Italie / PNUD et PNUE

Production

• Élimination accélérée de la production de CFC (entente)	Banque mondiale

FEUILLE D'ÉVALUATION DU PROJET - PROJET NON PLURIANNUEL
INDE

TITRE(S) DU PROJET	Agence d'exécution / bilatérale
a) Stratégie nationale de transition vers les inhalateurs à doseur sans CFC et plan d'élimination des CFC dans la fabrication d'inhalateurs à doseur pharmaceutiques	Italie / PNUD et PNUE
AGENCE NATIONALE DE COORDINATION	Cellule de l'ozone, ministère de l'Environnement et des Forêts

DONNEES DE CONSOMMATION DES SAO LES PLUS RECENTES TRAITEES DANS LE PROJET

R : ARTICLE - 7 DONNEES (TONNES PONDEREES, 2007, EN DATE D'OCTOBRE 2008)

CFC	998.5		

B : DONNÉES SECTORIELLES DU PROGRAMME DU PAYS (TONNES PONDEREES, 2007, EN DATE DE SEPTEMBRE 2008)

SAO	Inhalateurs à doseur	Sous-secteur/quantité	Sous-secteur / quantité	Sous-secteur / quantité
CFC-11	186.2			
CFC-12	421.9			
Consommation de CFC restante admissible au financement (tonnes pondérées)				0.0

AFFECTATIONS DU PLAN D'AFFAIRES DE L'ANNEE EN COURS		Financement en millions $ US	Élimination en tonnes pondérées
	a)	Italie 2 000 000	50
	b)	PNUE 400 000	0
	c)	PNUD 3 200 000	79.4

TITRE DU PROJET :	(a)
Utilisation des SAO en entreprise (tonnes pondérées) :	
SAO à éliminer (tonnes pondérées) :	704.0
SAO à éliminer (tonnes pondérées) :	s/o
Durée du projet (mois) :	60
Montant initial demandé ($ US) :	
Élément d'investissement ($ US) :	60 531 934
Élément de non-investissement : ($ US) :	1 170 000
Coût total ($USD)	61 701 934
Financement en contrepartie plus les ajustements ($ US) :	(34 942 615)
Montant demandé ($ US)	26 759 319
Coûts finals du projet ($ US) :	
Coût différentiel d'investissement : ($ US) :	10 164 000
Coûts de développement du produit ($ US) :	10 325 000
Coût différentiel d'exploitation :	4 615 668
Ajustement des intérêts étrangers ($ US) :	(3 971 386)
Ajustement des éléments d'exportation ($ US) :	(905 115)
Financement en contrepartie ($ US) :	(7 531 400)
Ajustement pour le Plan national d'élimination des CFC de l'Inde ($ US) :	(2 894 500)
Stratégie de transition ($ US) :	120 000
Mise en œuvre du projet et surveillance ($ US)	280 000
Subvention demandée ($ US) :	10 202 267
Rapport coût - efficacité ($ US / kg) :	
Coût de soutien à l'agence d'exécution ($ US) :	851 770
Coût total du projet pour le Fonds multilatéral ($ US) :	11 054 037
Statut du financement de contrepartie (O / N) :	O
Surveillance des objectifs du projet comprise (O / N) :	O

(*) 2,97 % des intérêts étrangers pour Cadila; 18,42 % pour Cipla; 50,67 % pour GSK et 19,24 % pour Sun Pharma.
(**) 5,6 par Cipla.

RECOMMANDATION[S] DU SECRÉTARIAT	A examiner individuellement

DESCRIPTION DU PROJET

1. Au nom du gouvernement de l'Inde, le PNUD, en tant qu'agence d'exécution, a soumis une stratégie nationale de transition vers des inhalateurs à doseur sans CFC et un plan de l'élimination des CFC dans la fabrication d'inhalateurs à doseur (plan sectoriel sur les inhalateurs à doseur) au Comité exécutif pour examen individuel lors de sa 56e réunion. Le coût total du projet soumis est de 26 759 319 $ US plus les coûts d'appui à l'agence au montant de 2 123 543 $ US.

2. Le projet sera mis en œuvre par le PNUD (24 639 400 $ US plus les coûts d'appui à l'agence au montant de 1 847 955 $ US), le PNUE (350 000 $ US plus les coûts d'appui à l'agence au montant de 45 500 $ US) et par le gouvernement de l'Italie (1 769 919 $ US plus les coûts d'appui à l'agence au montant de 230 088 $ US).

Sommaire du projet

3. Actuellement, il y a cinq fabricants d'inhalateurs à doseur en Inde, selon le Plan sectoriel sur les inhalateurs à doseur. Trois d'entre eux produisent des inhalateurs à doseur aux CFC et aux HFA.

4. Le coût total prévu du Plan sectoriel sur les inhalateurs à doseur en Inde, avant les ajustements causés par les intérêts étrangers ou le financement en contrepartie, est de 61 701 934 $ US tel qu'illustré dans le Tableau 1.

Tableau 1. Coût total prévu du projet sur les inhalateurs à doseur en Inde

Description	Cadila	Cipla	GSK	Midas Care	SunPharma	Total
CFC (tonnes pondérées)	3.5	526.6	31.7	18.8	5.9	586.5
Coûts d'investissement ($ US) :						
Investissement initial	1 218 000	11 175 600	1 178 600	780 000	780 000	15 132 200
Développement de produit	840 345	37 890 000	-	765 000	660 490	40 155 835
Coûts d'exploitation	124 842	4 411 716	330 680	308 850	67 811	5 243 899
Coûts d'investissement totaux	2 183 187	53 477 316	1 509 280	1 853 850	1 508 301	60 531 934
Coûts sans investissement ($ US) :						
Soutien technique						350 000
Appui des politiques / réglementaires						70 000
Prise de conscience						350 000
Surveillance / gestion						400 000
Coûts totaux sans investissement						1 170 000
Coûts totaux ($ US)						61 701 934
Rapport coût - efficacité global ($ US / kg) :						105.20

5. Du coût total du projet, le gouvernement de l'Inde demande 26 759 319 $ US après avoir déduit l'élément d'intérêts étrangers d'une entreprise, les ajustements équivalents à 4,9 pour cent de l'exportation des inhalateurs à doseur vers des pays n'étant pas couverts par l'Article 5 et 57 pourcent en contribution de contrepartie par des entreprises comme demandé par la décision 54/5. La répartition des surcoûts du Plan sectoriel sur les inhalateurs à doseur est illustrée dans le Tableau 2.

Tableau 2. Surcoûts totaux du projet sur les inhalateurs à doseur en Inde

Description	Cadila	Cipla	GSK	Midas Care	SunPharma	Total
CFC (tonnes pondérées)	3.5	526.6	31.7	18.8	5.9	586.5
Coûts d'investissement ($ US) :						
Investissement initial	852,600	7,208,262	223,934	546,000	546,000	9,376,796
Développement de produit	588 242	11 367 000	-	535 500	462 343	12 953 085
Coûts d'exploitation	87 389	2 845 557	62 829	216 195	47 468	3 259 438
Coûts d'investissement totaux	1 528 231	21 420 819	286 763	1 297 695	1 055 811	25 589 319
Coûts sans investissement ($ US) :						
Soutien technique						350 000
Appui des politiques / réglementaires						70 000
Prise de conscience						350 000
Surveillance / gestion						400 000
Coûts totaux sans investissement						1 170 000
Coûts totaux ($ US)						26 759 319
Rapport coût - efficacité global ($ US / kg) :						45.62

6. Une copie du Plan sectoriel sur les inhalateurs à doseur soumis par le PNUD est incluse dans le présent rapport.

COMMENTAIRES ET RECOMMANDATION DU SECRÉTARIAT

COMMENTAIRES

7. Le Secrétariat a examiné le projet concernant le secteur des inhalateurs à doseur aux CFC à la lumière de ce qui suit :

a) Les documents des politiques sur le sous-secteur des inhalateurs à doseur soumis aux 37e, 49e et 51e réunions.

b) Les amendements au programme de travail du PNUD soumis à la 54e réunion (les paragraphes 19 à 31 du document UNEP/OzL.Pro/ExCom/52/22);

c) Les projets d'élimination des inhalateurs à doseur qui ont été approuvés pour le Bangladesh, Cuba, l'Égypte, la République islamique d'Iran, le Mexique et l'Uruguay; et

d) Les décisions pertinentes du Comité exécutif concernant les inhalateurs à doseur, plus particulièrement la décision 52/25 (a) concernant l'approbation du financement pour la préparation du projet sur les inhalateurs à doseur en Inde.

8. Étant donné la complexité du Plan sectoriel sur les inhalateurs à doseur, les commentaires du Secrétariat sont classés selon les cinq catégories suivantes :

a) Analyse des installations de production d'inhalateurs à doseur en Inde;

b) Les dérogations pour utilisation essentielle des CFC;

c) La consommation de CFC utilisés dans la fabrication des inhalateurs à doseur;

d) Développement de produit;

e) Coûts initiaux et d'exploitation;

f) Activités de soutien technique, y compris la stratégie transitionnelle;

g) Ajustement du financement approuvé pour le Plan national d'élimination des CFC de l'Inde; et

h) Une proposition du Secrétariat.

Analyse des installations de production d'inhalateurs à doseur en Inde

9. Après avoir examiné les renseignements contenus dans le Plan sectoriel sur les inhalateurs à doseur, le Secrétariat a remarqué ce qui suit :

a) Les niveaux de production totale des inhalateurs à doseur en Inde pour la période entre 2003 et 2007 sont illustrés dans le Tableau 3 comme suit :

Tableau 3. Fabricants d'inhalateurs à doseur en Inde

Fabricant	Production totale (million d'inhalateurs à doseur)				
	2003	2004	2005	2006	2007
INHALATEURS À DOSEUR AUX CFC					
Cadila Healthcare Ltd.	0.15	0.30	0.42	0.69	0.71
Cipla Ltd.	26.27	33.04	28.18	35.44	27.39
GlaxoSmithKline Pharmaceuticals Ltd.	1.15	0.94	1.21	0.79	0.94
Midas-Care Pharmaceuticals Ltd.	0.97	1.02	1.65	1.85	1.76
Sun Pharmaceutical Industries Ltd.	0.29	0.39	0.31	0.39	0.39
Sous-total des INHALATEURS À DOSEUR AUX CFC	**28.83**	**35.69**	**31.77**	**39.16**	**31.19**
INHALATEURS À DOSEUR AUX HFA					
Cipla Ltd.	0.47	1.21	4.03	11.01	24.06
Midas-Care Pharmaceuticals Ltd.	0.00	0.024	0.035	0.15	0.26
Sun Pharmaceutical Industries Ltd.	0.00	0.00	0.00	0.029	0.00
Sous-total des INHALATEURS À DOSEUR AUX HFA	**0.47**	**1.23**	**4.06**	**11.19**	**24.32**
Total	**29.30**	**36.92**	**35.84**	**50.35**	**55.51**

b) Le niveau de consommation des CFC dans la fabrication d'inhalateurs à doseur a augmenté, passant de 578,9 tonnes pondérées en 2003 à 763,6 tonnes pondérées en 2006. En 2007, la consommation de CFC a diminué, atteignant 608,1 tonnes pondérées comme illustré dans le Tableau 4 :

Tableau 4 : Niveaux de consommation des CFC dans la fabrication des inhalateurs à doseur en Inde

Fabricant	Consommation de CFC (tonnes pondérées)				
	2003	**2004**	**2005**	**2006**	**2007**
Cadila	2.9	5.9	7.5	11.6	8.5
CIPLA	526.6	687.6	670.9	698.2	537.7
GSK	24.6	20.1	25.9	16.9	20.1
Midas-are	18.8	21.3	29.8	29.0	34.0
Sun Pharma	6.0	7.9	6.3	7.9	7.8
Total	**578.9**	**742.8**	**740.4**	**763.6**	**608.1**

c) Les prévisions de la demande pour les CFC et les HFA pour les inhalateurs à doseur en Inde entre 2008 et 2013 sont illustrées dans le Tableau 5 :

Tableau 5. Consommation de CFC et de HFA prévue dans la fabrication d'inhalateurs à doseur

Propulseur	Consommation de CFC et de HFA (tonnes métriques)*					
	2008	**2009**	**2010**	**2011**	**2012**	**2013**
CFC	604	484	338	203	71	0
HFA	566	760	983	1,205	1,405	1,556
Total	1,170	1,244	1,322	1,408	1,476	1,556

(*) Fondé sur les taux de croissance au cours des cinq dernières années, avec la présomption de soutien technique et financier pour la transition des technologies aux CFC vers les HFA, en l'absence desquelles, trois années supplémentaires seront nécessaires pour l'élimination complète des CFC.

d) La production d'inhalateurs à doseur aux CFC a augmenté, passant de 28,8 millions en 2003 à près de 31,2 millions en 2007. Cependant, les ventes d'inhalateurs à doseur aux CFC sur le marché intérieur a diminué, passant de 15 millions d'unités à un peu plus de 10 millions d'unités pour la même période. Les niveaux des ventes sur le marché intérieurs et des exportations vers des pays visés par l'Article 5 et les pays non visés par l'Article 5 d'inhalateurs à doseur aux CFC fabriqués en Inde sont illustrés dans le Tableau 6 :

Tableau 6. Ventes sur le marché intérieur et exportations d'inhalateurs à doseur aux CFC en Inde

Paramètre	Total (million d'inhalateurs à doseur)				
	2003	**2004**	**2005**	**2006**	**2007**
Ventes sur le marché intérieur	14.90	15.72	16.21	18.27	10.33
Exportations vers des pays non visés par l'Article 5	0.42	0.05	0.42	0.47	1.75
Exportations vers des pays visés par l'Article 5	13.52	19.93	15.16	20.43	19.30
Exportations totales	13.94	19.98	15.57	20.90	20.82
Production totale	28.83	35.69	31.77	39.16	31.19
Exportations vers des pays non visés par l'Article 5 (%)	1.5 %	0.1 %	1.3 %	1.2 %	5.6 %

Dérogations pour utilisation essentielle des CFC

10. Le Comité exécutif, par la décision 51/34, a demandé *inter alia*, que les pays qui ont des usines de fabrication d'inhalateurs à doseurs devraient être avisés du choix du moment pour commencer à examiner le besoin de dérogations pour utilisation essentielle au-delà de la date d'élimination de 2010. Le

Comité exécutif a aussi demandé, dans sa décision 54/5, *inter alia,* que les propositions de projet pour les inhalateurs à doseur devraient clairement décrire « les volumes de CFC accumulés actuellement et par le passé dans le but de faciliter une transition en douceur d'inhalateurs à doseur aux CFC et d'atténuer le besoin de demande temporaire de dérogation pour utilisation essentielle ». Selon la proposition de projet, on prévoit que la conversion sera terminée d'ici décembre 2013, c.-à-d. quatre ans après la date obligatoire pour l'élimination complète des CFC. Cependant, le besoin de dérogations pour utilisation essentielle de CFC ou pour l'accumulation de CFC de catégorie aérosol pharmaceutique (y compris les quantités) pour la période de transition (c.-à-d., deux à trois années supplémentaires) n'ont pas été complètement pris en considération dans le Plan sectoriel sur les inhalateurs à doseur. Pour ces motifs, le Secrétariat a demandé si cette question a été abordée avec les intervenants majeurs en Inde.

11. Le PNUD a précisé que le Plan sectoriel sur les inhalateurs à doseur garantira que la conversion aux inhalateurs à doseur sans CFC serait terminée d'ici décembre 2012 (c.-à-d., trois ans après l'élimination complète des CFC). Il n'y a pas de réserve de CFC disponible pour les fabricants d'inhalateurs à doseur pour combler les besoins pendant la période de transition. Le gouvernement a bien avisé les intervenants du processus de nomination de dérogation pour utilisation essentielle. En conséquence, le gouvernement de l'Inde, avec l'aide des agences d'exécution et des fabricants d'inhalateurs à doseur, serait en position de faire une demande de dérogation pour utilisation essentielle d'ici janvier 2009.

Consommation de CFC utilisés dans la fabrication des inhalateurs à doseur

12. Dans le contexte de la décision sur la planification stratégique du Comité exécutif, le Comité a convenu qu'un financement supplémentaire doit être fondé sur l'engagement du pays à atteindre les réductions globales permanentes durables dans la consommation et la production, lorsque pertinent. Il a aussi convenu que des rapports de consommation futurs pourraient dépasser ou être sous les niveaux résultant des calculs convenus, mais si la consommation dépasse les niveaux résultats, de telles augmentations dans la consommation ne seraient pas admissibles au financement (décision 35/57). Lors de la 42^{e} réunion, le Comité exécutif a approuvé le Plan national d'élimination des CFC couvrant toute la consommation de CFC restante admissible au financement en Inde (c.-à-d., 847 tonnes pondérées). Le Plan d'élimination était fondé sur le niveau de consommation de CFC en 2003. En tenant compte de ceci, le Secrétariat a souligné que le niveau de consommation de CFC couvert par le projet sur les inhalateurs à doseur est de 586,5 tonnes pondérées (consommation de CFC en 2003) et non la consommation de 2007 qui est de 704 tonnes pondérées).

13. Le PNUD a déclaré que le Plan sectoriel sur les inhalateurs à doseur a été formulé en fonction des critères d'admissibilité en ce qui a trait à 2003. En conséquence, seuls les produits développés et commercialisés avec les lignes de production en place en 2003 ont été pris en considération. Les surcoûts d'exploitation calculés comme applicable en 2003 seraient plus élevés de manière significative parce qu'à ce moment, les différences de coûts entre les valves aux CFC et les valves aux HFS étaient plus élevées et il y avait aussi une différence de coût significative entre les propulseurs aux CFC et les propulseurs aux HFA. Pour ces motifs, les coûts d'exploitation calculés en fonction des niveaux de consommation de 2007 sont moins élevés.

Développement de produit

14. En 2003, des inhalateurs à doseur aux CFC contenant treize ingrédients actifs étaient fabriqués en Inde, comme illustré dans le Tableau 7. Plusieurs de ces inhalateurs à doseur aux CFC ont été formulés dans des forces multiples (c.-à-d., des concentrations différentes du même ingrédient actif).

Tableau 7. Inhalateurs à doseur aux CFC par ingrédient actif et usine de fabrication (2003)

Non.	Ingrédient	Inhalateurs à doseur fabriqués par entreprise						
		Cadila	Cipla	GSK	Midas-are	SunPharma	Total des inhalateurs à doseur	% des inhalateurs à doseurs
1	Salbutamol	30 010	16 905 000	1 044 505	611 800	56 600	18 647 915	64.6%
2	Béclométhasone		4 663 000	107 475	117 900		4 888 375	16.9%
3	Béclométhasone / Salbutamol		1925 000		27 400		1 952 400	6.8%
4	Salmeterol / Fluticasone		778 000		10 000	163 771	951 771	3.3%
5	Ipratropium	20 070	786 000		43 000		849 070	2.9%
6	Budesonide	10 010	300 000		15 200	51 738	376 948	1.3%
7	Ipratropium / Salbutamol	20 070	293 000		61 200		374 270	1.3%
8	Budesonide / Formoterol	69 293	191 000		75 900	27 379	363 572	1.3%
9	Salmeterol		154 000				154 000	0.5%
10	Fluticasone		134 000				134 000	0.5%
11	Cromoglycate sodique		66 000				66 000	0.2%
12	Tiotropium		45 000				45 000	0.2%
13	Formeterol	1 910	31 000		11 700		44 610	0.2%
	Total des inhalateurs à doseur	**151 363**	**26 271 000**	**1 151 980**	**974 100**	**299 488**	**28 847 931**	**100.0%**
	% du total par entreprise	0.5 %	91.1 %	4.0 %	3.4 %	1.0 %	100.0 %	

15. En ce qui concerne les données présentées dans le Tableau 7 et les renseignements présentés dans le projet des inhalateurs à doseur, le Secrétariat a remarqué ce qui suit :

a) En 2003, près de 82 pour cent de tous les inhalateurs à doseur aux CFC contenaient du salbutamol (64,6 pour cent) ou du béclaméthasone (16,9 pour cent). 10 pour cent supplémentaires des inhalateurs contenaient une combinaison de béclaméthasone / salbutamol ou de salmeterol / fluticasone;

b) Une entreprise, Cipla, fabrique plus de 91 pour cent de tous les inhalateurs à doseur aux CFC fabriqués en Inde;

c) GSK, le deuxième fabricant en importance d'inhalateurs à doseur aux CFC, avec une production totale de 4 pour cent, appartient en partie à une compagnie étrangère non visée par l'Article 5 (50,67 pour cent);

d) De nombreux inhalateurs à doseur aux CFC n'ont pas été produits au cours de la dernière année ou des deux dernières années, notamment : formeterol (Cadila, Cipla, Midas Care); ipratropium (Cadila, Midas Care); et cromoglycate sodique (Cipla). Pour ces motifs, la demande de reformulation vers la technologie aux HFA pour ces ingrédients ne serait pas admissible au financement;

Le PNUD a mentionné que tous les inhalateurs à doseur mentionnés ci-haut ont été fabriqués en 2003. Si 2003 doit être utilisé comme année de référence pour admissibilité, le développement et autres coûts de reformulation de ces produits sont admissibles. Quelques-uns des produits mentionnés sont spécialisés avec des profils thérapeutiques précis et sont habituellement requis en petites quantités. La nécessité de ces produits peut varier d'une année à l'autre. De plus, toutes les entreprises fabricant des inhalateurs à

doseur ont confirmé que tous leurs inhalateurs à doseur aux CFC fabriqués en 2003 seront convertis à la technologie HFA.

16. Le coût total lié au développement d'inhalateurs à doseur aux HFA pour chaque ingrédient actif est de plus de 40 millions $ US comme illustré dans le Tableau 8. De ce coût, le gouvernement de l'Inde demande 12 953 085 $ US (ce qui représente 32,3 pour cent des coûts totaux).

Tableau 8. Total des coûts prévus pour le développement de produit ($ US)

Ingrédient	Cadila	Cipla	GSK	Midas-are	SunPharma	Total $	% Total $
Béclométhasone		4 200 000		90 000		4 290 000	10.7 %
Béclométhasone / Salbutamol		2 100 000		45 000		2 145 000	5.4 %
Budesonide	109 528	4,200 000		90 000	132 098	4 531 626	11.3 %
Budesonide / Formoterol	226 610	2 100 000		90 000	132 098	2 548 708	6.4 %
Fluticasone		4 200 000		90 000	132 098	4 422 098	11.0 %
Formeterol	54 764	2 100 000		45 000		2 199 764	5.5 %
Ipratropium	54 764	4 200 000		45 000		4 299 764	10.7 %
Ipratropium / Salbutamol	113 305	2 100 000		45 000		2 258 305	5.6 %
Salbutamol	54 764	2 100 000		45 000	66 049	2 265 813	5.7 %
Salmeterol		2 100 000				2 100 000	5.2 %
Salmeterol / Fluticasone	226 610	4 200 000		90 000	132 098	4 648 708	11.6 %
Cromoglycate sodique		2 100 000		45 000		2 145 000	5.4 %
Tiotropium		2 100 000		45 000	66 049	2 211 049	5.5 %
Coût total ($ US)	840 345	37 800 000	-	765 000	660 490	40 065 835	100.0 %
Coût total demandé ($ US)	588 242	11 367 000	-	535 500	462 343	12 953 085	

17. En examinant les coûts totaux pour le développement de produit, le Secrétariat a remarqué ce qui suit :

a) Bien que treize inhalateurs à doseur aux CFC différents contenant un ingrédient actif ont été fabriqués en 2003, le Plan sectoriel sur les inhalateurs à doseur propose une reformulation pour 55 inhalateurs à doseur aux CFC, y compris de nombreux ingrédients actifs pour lesquels deux concentrations différentes sont présentées comme deux produits différents;

Le PNUD a mentionné que les inhalateurs à doseur avec le même ingrédient actif mettent en cause plusieurs étapes de développement de produit pour chaque concentration, telles que des études de développement et de stabilité dans le but d'enregistrer les produits. Lorsqu'il y a trois concentrations ou plus, le développement de la concentration la plus basse et la plus élevée et effectuer des évaluations formelles de stabilité sont des pratiques courantes alors que seules des études de rapprochement seraient effectuées sur les concentrations moyennes (ceci a dûment été pris en considération).

b) Aucune demande de financement n'a été soumise pour les inhalateurs à doseur aux HFA par GSK (c.-à-d., que les coûts seront absorbés par la compagnie). Cependant, les inhalateurs à doseur reformulés comporteront des coûts d'exploitation plus élevés à cause du besoin pour des contenants et des valves plus onéreuses.

c) Les coûts pour le développement de produit comprennent de nombreux inhalateurs à doseur aux CFC dont la production a commencé après 2003, notamment : salmeterol / fluticasone (Cadila); tiotropium / formoterol et levosalbutamol (Cipla); et fluticasone et

tiotropium (Sun Pharma). Pour ces motifs, les coûts liés à la reformulation vers la technologie HFA de ces ingrédients actifs ne sont pas admissibles;

Le PNUD a mentionné que ces inhalateurs ont été commercialisés en 2004; des lots étaient déjà produits à l'échelle industrielle en 2003 et des soumissions d'enregistrement ont été déposées. En tenant compte de ceci, ces inhalateurs à doseur ont été inclus dans le Plan sectoriel sur les inhalateurs à doseur.

d) Le coût de développement de produit pour chaque ingrédient actif varie largement parmi les fabricants. Quoi qu'il en soit, le même niveau de financement est demandé pour le développement de chaque produit, sans égard à la quantité d'inhalateurs à doseur produits annuellement (c.-à-d., Cipla demande 2,1 millions $ US pour le développement d'inhalateurs à doseur au salbutamol pour une production total de 16,9 millions d'unités et 2,1 millions $ US supplémentaires pour le développement d'inhalateurs à doseur au tiotropium pour une production totale de 45 000 unités seulement) De plus, un financement est demandé pour au moins deux des concentrations des inhalateurs à doseur aux CFC formulés à plusieurs concentration (généralement la concentration la plus élevée et la plus basse);

e) En réponse à ces questions, le PNUD a souligné que les coûts de développement de produit sont fondés sur des situations précises existant dans un pays / une entreprise et ils dépendent de la capacité technique de base disponible et des systèmes / des frais généraux internes. En outre, les demandes réglementaires pour les marchés outre-mer peuvent faire augmenter les coûts de développement. En ce qui concerne les fabricants d'inhalateurs à doseur en Inde, notamment Cipla, dont le marché d'exportation est important, ceci peut avoir un effet significatif sur les coûts de développement. Les coûts de développement représentent des dépenses fixes peu importe les quantités fabriquées et nécessaires afin de s'assurer que le produit soit soigneusement développé, enregistré de manière appropriée, sécuritaire et efficace. Dans la reformulation des inhalateurs à doseur avec deux ingrédients actifs, on doit élaborer deux méthodes d'analyse pour deux concentrations; le contrôle des composantes pour la compatibilité avec la concentration individuelle et l'interaction doivent être pris en considération et le double des analyses doit toujours être effectué durant la phase de stabilité.

Coûts d'investissement initial et d'exploitation et activités de soutien technique

18. Suite à une demande de renseignements supplémentaires concernant l'élément d'intérêts étrangers dans les usines de fabrication d'inhalateurs à doseur en Inde, le PNUD a déclaré ce qui suit : 2,97 pour cent d'intérêts étrangers pour Cadila, 18,42 pour cent pour Cipla; 50,67 pour cent pour GSK et 19,24 pour cent pour Sun Pharma.

19. Pour chaque ligne de fabrication d'inhalateurs à doseur établie avant 2003, le Secrétariat et le PNUD ont eu des discussions détaillées concernant la capacité installée, la modernisation technologique, l'admissibilité d'items d'équipement à la lumière de l'équipement de base et le coût de l'équipement. Les coûts d'exploitation ont été calculés en fonction des niveaux de production de 2007 et non des niveaux de 2003.

20. Le Plan sectoriel sur les inhalateurs à doseur comprend une demande au montant de 1 170 000 $ US pour les éléments sans investissement suivants :

a) Le soutien technique pour la mise en œuvre de la stratégie nationale de transition vers des inhalateurs à doseur sans CFC (350 000 $ US), pour *inter alia,* la préparation des spécifications des équipement à acheter, l'évaluation des soumissions des fournisseurs, de fournir de l'orientation aux entreprises bénéficiaires lors du démarrage avec de nouveaux équipements et processus; aider dans l'évaluation de la production et des tests de qualité des produits, les commandes de projet, y compris la destruction d'équipement aux CFC s'il y a lieu, la vérification de l'épuisement des stocks de CFC et la vérification des processus de production sans CFC en opération; l'autorisation pour la complétion du projet et les exigences en matière de rapports;

b) L'appui pour les politiques et réglementations (70 000 $ US), qui comprend le contrôle de l'approvisionnement des inhalateurs à doseur aux CFC et la promotion des solutions de rechange sans CFC;

c) Sensibilisation et renforcement des capacités (350 000 $ US, qui comprend la diffusion de renseignements et les activités de sensibilisation, l'élaboration et la distribution de matériel promotionnel et la promotion de la sensibilisation auprès du public; et

d) Les unités de gestion et de surveillance (400 000 $ US), qui sera responsable de la coordination de la mise en œuvre d'éléments divers de la stratégie, de rapports périodiques, de coordination de mise en œuvre au niveau des entreprises et des activités d'élimination et la vérification et l'attestation de l'élimination des CFC au niveau des entreprises.

21. En ce qui concerne les activités sans investissement, le Secrétariat a remarqué ce qui suit :

a) La population souffrant d'asthme et traitée avec des inhalateurs à doseur en Inde est petite et elle a diminué au cours des derniers années;

b) Il y a une percée majeure d'inhalateurs à doseur aux HFA dans le pays. en 2007, les inhalateurs à doseur aux HFA représentaient près de 44 pour cent de la production totale d'inhalateurs à doseur en Inde. On prévoit que la fabrication d'inhalateurs à doseur aux HFA continuera d'augmenter annuellement, remplaçant les inhalateurs à doseur aux CFC. De plus, Cipla et Sun Pharma fabriquent actuellement des inhalateurs à poudre sèche.

Le PNUD a mentionné que les principaux obstacles à la percée du marché de la technologie des inhalateurs à doseur aux HFA sont les augmentations des coûts combinées avec les contrôles obligatoires des prix de vente des drogues et des appareils, de l'étendue inadéquate des renseignements et de l'expérience inadéquate avec les inhalateurs à doseur aux HFA, même parmi les professionnels de la santé et le besoin de renforcer les politiques / réglementations pertinentes. À cause de ces obstacles, les fabricants d'inhalateurs à doseur reçoivent des compensations inadéquates pour les ventes sur le marché intérieur et, pour ces motifs, on préfère les exportations. Ces obstacles peuvent seulement être surmontés par des interventions techniques et financières disponibles grâce aux mécanismes du Protocole de Montréal. La justification pour le développement de produits d'inhalateurs à poudre sèche à dose unique était pour répondre à un groupe précis de patients âgés qui avaient de la difficultés à utiliser les produits d'inhalateurs à doseur et non de remplacer les inhalateurs à doseur aux CFC comme traitement thérapeutique pour tous les patients souffrants d'asthme et de maladies pulmonaires obstructives chroniques (MPOC). Cependant, les produits d'inhalateurs à

poudre sèche à dose unique n'ont pas été bien accueillis par les patients et les médecins en Inde.

c) Bien qu'il y ait plusieurs fabricants d'inhalateurs à doseur en Inde, plus de 91 pour cent de la production provient d'une compagnie; plusieurs lignes de fabrication ont été converties à la technologie HFA et trois des entreprises fabriquent déjà des inhalateurs à doseur aux HFA.

Le PNUD a mentionné que bien qu'un fabricant d'inhalateurs à doseur est de loin le plus gros fabricant en Inde, la stratégie de transition est complexe, met en cause un large éventail d'intervenants et tient compte de répercussions critiques sur la santé et sociales. Elle ne peut être traitée comme un simple projet d'élimination car cela sous-estimerait les problèmes mis en cause.

Ajustement du financement approuvé pour le Plan national d'élimination des CFC de l'Inde

22. En tenant compte que la consommation restante admissible au financement comprend déjà la quantité de CFC qui a été utilisée dans la fabrication des inhalateurs à doseur, le niveau de financement global pour le Plan sectoriel sur les inhalateurs à doseur devrait être ajusté de 2 894 500 $ US pour éviter la double comptabilisation. Pour le calcul de cet ajustement, le Secrétariat remarque ce qui suit :

a) Le Plan d'élimination de l'Inde a été approuvé à la 42e réunion en fonction des niveaux de consommation de CFC de 2003;

b) Selon le Plan d'élimination, seules 120 tonnes pondérées de CFC ont été utilisées dans la production d'inhalateurs à doseur aux CFC. Le niveau de consommation de CFC déclaré dans le Plan d'élimination est de beaucoup inférieur aux 639,2 tonnes pondérées de CFC déclarées dans la proposition pour la préparation d'un projet d'élimination des inhalateurs à doseur en Inde soumis par le gouvernement à la 52^{e} réunion et aussi inférieur à la consommation de 578,9 tonnes pondérées de CFC déclarée dans la proposition de projet soumise à la 56^{e} réunion.

c) Le coût du Plan d'élimination de l'Inde (de même que pour la majorité des Plans nationaux d'élimination des CFC des pays non visés par l'Article 5) a été calculé à l'aide de la valeur de rapport coût - efficacité de 5 $ US / kg de CFC utilisé dans le secteur de l'entretien de l'équipement de réfrigération plus le seuil de coût - efficacité appliqué à chaque secteur où des CFC sont toujours utilisés plus un financement supplémentaire pour la surveillance et les rapports.

23. En prenant le compte ci-dessus en considération, l'ajustement au Plan sectoriel sur les inhalateurs à doseur serait calculé en fonction de la consommation de CFC de 2003, soit 578,9 tonnes pondérées (représentant la consommation la plus précise dans le secteur des inhalateurs à doseur) et d'une valeur de rapport coût - efficacité de 5 $ US / kg.

Proposition du Secrétariat

24. Fondée sur les questions soulevées et les observations du Secrétariat dans l'examen du Plan sectoriel sur les inhalateurs à doseur soumis par le PNUD; le grand nombre d'inhalateurs à doseur avec différents ingrédients actifs et différentes concentration; les renseignements supplémentaires recueillis pendant l'examen du projet; de même que l'expérience acquise par le Fonds multilatéral dans le secteur des inhalateurs à doseur, le Secrétariat a proposé une méthodologie différente au PNUD décrite ci-

dessous visant à déterminer les surcoûts du Plan sectoriel sur les inhalateurs à doseur. Cette méthodologie est compatible avec les politiques et lignes directrices actuelles du Fonds multilatéral et traite avec succès de toutes les questions de politiques et de coûts qui ont été soulevées par le Secrétariat pendant le processus d'examen du projet.

Stratégie de transition

25. Le Plan sectoriel sur les inhalateurs à doseur a déterminé plusieurs éléments clés qui permettraient une transition des CFC vers des solutions sans CFC dans le secteur des inhalateurs à doseur. Ces éléments comprennent le soutien pour l'examen des politiques et réglementations en matière de SAO, y compris les considérations des mesures incitatives fiscales pour l'adoption de solutions sans CFC et les procédures de traitement en priorité et à grande vitesse d'approbation des inhalateurs à doseur sans CFC; les considérations pour les demandes de dérogations pour utilisation essentielle au-delà de la date butoir d'élimination de 2010 et la sensibilisation du public et la diffusion des renseignements. En tenant compte du nombre d'usine de fabrication, leurs distributions géographiques et le nombre d'ingrédients actifs dans les inhalateurs à doseur qui seront convertis à la technologie HFA, le coût de la stratégie de transition serait de 120 000 $ US.

Développement de produit

26. La proposition de calcul du coût de développement des inhalateurs à doseur aux HFA est fondée sur les considérations suivantes :

a) Treize ingrédients actifs dans les inhalateurs à doseur ont été fabriqués en Inde en 2003. Six d'entre eux ont été formulés avec plus d'une concentration. Le PNUD a reçu la confirmation que tous ces inhalateurs à doseur aux CFC seront convertis à la technologie HFA;

b) Approximativement 95 pour cent du nombre total des inhalateurs à doseur fabriqués contiennent les ingrédients actifs suivants : salbutamol, béclaméthasone, béclaméthasone/salbutamol, salmeterol / fluticasone et ipratropium (Tableau 7 ci-dessus). On propose 750 000 $ US pour le développement des inhalateurs à doseur aux HFA pour chacun de ces ingrédients actifs (ce niveau de financement est légèrement inférieur à certains projets sur les inhalateurs à doseur déjà approuvés). Si plus d'une entreprise fabrique des inhalateurs à doseur avec le même ingrédient actif, un montant supplémentaire de 100 000 $ US est proposé pour chacune des entreprises supplémentaires afin de couvrir les coûts liés aux tests *in situ*, à la préparation des dossiers techniques et à l'enregistrement. Par exemple, 1 050 000 $ US serait le coût total pour le développement des inhalateurs à doseur au salbutamol qui est fabriqué par quatre entreprises;

c) On propose un montant de 375 000 $ US pour le développement d'une seconde concentration pour les cinq ingrédients les plus actifs. Si plus d'une entreprise fabrique des inhalateurs à doseur avec le même ingrédient actif, un montant supplémentaire de 100 000 $ US est proposé pour chacune des entreprises supplémentaires afin de couvrir les coûts liés à la préparation des dossiers techniques, à l'enregistrement et à l'approbation par les autorités médicales.

d) On propose une approche similaire pour le reste des huit ingrédients actifs (c.-à-d., ipratropium, budesonide, ipratropium / salbutamol, budesonide / formoterol, salmeterol,

fluticasone, cromoglycate sodique, tiotropium, formoterol), avec le niveau de financement suivant :

i) un montant de 300 000 $ US pour le développement de chacun des ingrédients ci-dessus. Si plus d'une entreprise fabrique le même ingrédient actif, on propose un montant supplémentaire de 100 000 $ US pour chaque entreprise supplémentaires pour les dossiers techniques, l'enregistrement et l'approbation; et

ii) On propose un montant de 150 000 $ US pour le développement d'une seconde concentration pour chacun des ingrédients actifs ci-dessus. Si plus d'une entreprise fabrique le même ingrédient actif, on propose un montant supplémentaire de 100 000 $ US pour chaque entreprise supplémentaire pour les dossiers techniques, l'enregistrement et l'approbation;

e) Les coûts de développement pour le béclaméthasone fabriqué par GKS seront absorbés par l'entreprise.

27. Le coût total lié au développement de la technologie HFA serait de 10 325 000 $ US (avant toute considération pour des ajustements conformément aux décisions pertinentes).

Coûts initiaux et d'exploitation

28. Le niveau de financement pour la conversion des lignes de fabrication dans les cinq usines de fabrication est comme suit :

a) 726 000 $ US pour chacune des quatre installations dont la production est moyenne (c.-à-d., une production entre 20 et 32 boîtes / minutes) fondé sur une proposition d'une nouvelle ligne de production en deux étapes;

b) 7 260 000 $ US pour la seule usine dont la consommation de CFC est supérieure à 520 tonnes pondérées en 2003, calculée en fonction de cinq lignes de production indépendantes à un prix unitaire de 1 452 000 $ US.

29. Pour ces motifs, le coût d'investissement initial total, incluant la conversion à la technologie HFA, s'élève à 10 164 000 $ US, y compris les coûts d'installation, de mise en service et d'imprévus.

30. Les coûts d'exploitation sont calculés en fonction du nombre total d'inhalateurs à doseur produits en 2003 (c.-à-d., environ 28,8 millions d'inhalateurs à doseur) et un prix unitaire de 0,16 $ US / inhalateur à doseur qui est le surcoût lié à la nouvelle valve pour les HFA comme documenté en Inde et 0,01 $ US de plus pour les composés supplémentaires. Les coûts d'exploitation résultant s'élèvent à 4 615 668 $ US.

31. Étant donné le nombre d'ingrédients actifs différents dans les inhalateurs à doseur produits par plusieurs lignes de production de cinq entreprises différentes, le Secrétariat a proposé la création d'une unité de mise en œuvre des projets et de surveillance pour un coût total de 280 000 $ US qui serait responsable, entre autres choses, de fournir de l'aide dans la préparation des spécifications de l'équipement à acheter, dans l'évaluation des soumissions des fournisseurs d'équipement, de fournir de l'orientation technique aux entreprises bénéficiaires lors du démarrage avec un nouvel équipement et processus, répondre aux questions techniques lors de l'application graduelle de la nouvelle coordination de la mise en œuvre des dives éléments de la stratégie et la surveillance et la vérification.

Sommaire du financement

32. Le niveau total de financement proposé pour l'élimination complète des CFC utilisés dans la fabrication des inhalateurs en Inde est comme suit :

Description	**$ US**
Développement de produit	10 325 000
Investissements initiaux	10 164 000
Coûts d'exploitation	4 615 668
Sous-total du coût du projet	25 104 668

33. De ce chiffre de 25 104 668 $ US, les montants suivants doivent être déduits :

Description	**$ US**
Intérêts étrangers	(3 971 386)
Exportations vers des pays non visés par l'Article 5	(905 115)
Financement en contrepartie (30 %)	(7 531 400)
Ajustement pour le Plan national d'élimination des CFC de l'Inde ($ US) :	(2 894 500)
Sous-total des ajustements	(15 302 401)

34. En conséquence, le coût total du Plan sectoriel des inhalateurs à doseur en Inde est comme suit :

Coût du projet	9 802 267 $ US
Stratégie de transition	120 000 $ US
Unité de mise en œuvre du projet et surveillance	280 000 $ US
Grand total	10 202 267 $ US

35. Les agences bilatérales et d'exécution ont appuyé le niveau de financement proposé par le Secrétariat. La répartition du niveau de financement parmi les agences est démontrée ci-dessous :

Financement ($ US)	**Italie**	**PNUD**	**PNUE**	**Total**
Coût du projet	2 000 000	8 082 267	120 000	10 202 267
Coût d'appui à l'agence	230 000	606 170	15 600	851 770
Coût total	2 230 000	8 688 437	135 600	11 054 037

36. Le gouvernement de l'Inde aura la souplesse nécessaire pour utiliser le financement disponible selon le Plan sectoriel des inhalateurs à doseur pour les activités qu'il juge adéquates afin de terminer l'élimination des CFC dans le secteur des inhalateurs à doseur et conformément aux décisions et lignes directrices pertinentes du Fonds multilatéral.

RECOMMANDATION

37. Remarquant la contribution de contrepartie importante des entreprises fabriquant des inhalateurs à doseur, le besoin urgent de terminer la conversion du secteur des inhalateurs à doseur pour les solutions sans CFC et à la lumière des commentaires du Secrétariat, le Comité exécutif peut vouloir étudier la possibilité d'approuver la stratégie nationale de transition aux inhalateurs à doseur sans CFC et le Plan d'élimination des CFC dans la fabrication des inhalateurs à doseur pharmaceutiques en Inde pour un montant de 10 202 267 $ US plus les coûts d'appui à l'agence au montant de 851 7000 $ US réparti comme suit :

a) 2 000 000 $ US plus les coûts d'appui à l'agence au montant de 230 000 $ US pour le gouvernement de l'Italie;

b) 8 082 267 $ US plus les coûts d'appui à l'agence au montant de 606 170 $ US pour le PNUD; et

c) 120 000 $ US plus les coûts d'appui à l'agence au montant de 15 600 $ US pour le PNUE.

ACCÉLÉRATION DE L'ÉLIMINATION DE LA PRODUCTION DE CFC (Accord)

Introduction

38. La Banque mondiale propose à la 56e réunion du Comité exécutif au nom du gouvernement de l'Inde, le projet d'accord révisé entre l'Inde et le Comité exécutif pour l'accélération de l'élimination de la production de CFC, joint à l'annexe I au présent document. Les changements apportés au projet d'accord initial sont indiqués en caractères gras afin de faciliter la lecture.

Contexte

39. La 54e réunion du Comité exécutif a décidé :

« a) D'approuver, en principe, la somme de 3,17 millions $US pour la fermeture des installations de production de CFC en Inde au 1er août 2008, 17 mois avant la date prévue au calendrier, étant entendu que la production supplémentaire de CFC du 1er janvier au 31 juillet 2008, destinée surtout à la production d'inhalateurs à doseur, ne dépasserait pas 690 tonnes;

b) De charger le Secrétariat du Fonds et la Banque mondiale de préparer un projet d'accord sur l'accélération de la fermeture de la production de CFC et de le présenter à la 55e réunion du Comité exécutif. Le projet d'accord devrait comprendre l'engagement du gouvernement à s'assurer que les stocks restants de CFC (1 363 tonnes) à la fin de 2007 seront exportés au plus tard le 31 décembre 2009, à l'exception d'un maximum de 135 tonnes qui pourraient être nécessaires afin de satisfaire aux besoins du secteur des inhalateurs à doseur;

c) De demander à l'Inde de confirmer dans l'accord ses besoins de CFC pour le secteur des inhalateurs à doseur en 2008 et 2009, afin de déterminer la quantité exacte de CFC à exporter;

d) Que le projet d'accord devrait décrire et comprendre les étapes nécessaires afin de mener à terme le démantèlement et de vérifier que la production a réellement cessé et les installations ont été démantelées; et

(Décision 54/37) »

40. La 54e réunion du Comité exécutif a aussi décidé d'aider l'Inde à respecter les objectifs d'élimination de la consommation de CFC précisés dans l'accord, qui ont un lien avec la gestion intégrée de l'élimination de la production et de la consommation de CFC au pays, comme suit :

> « g) En ce qui a trait à l'accord du secteur de la consommation de CFC, que :
>
> i) L'Inde ne produirait pas plus de 690 tonnes de CFC, surtout destinées à la fabrication d'inhalateurs à doseur, jusqu'au 1er août 2008 ;
>
> ii) Les producteurs de CFC de l'Inde ne vendraient pas plus de 825 tonnes de CFC pour la production d'inhalateurs à doseur en 2008 et en 2009, à raison de 690 tonnes de CFC nouvellement produits et 135 tonnes traitées à partir des stocks existants;
>
> iii) L'Inde exporterait 1 228 tonnes de CFC avant le 1er décembre 2008, au plus tard ;
>
> iv) L'Inde n'importerait plus de CFC d'aucune sorte.
>
> (Décision 54/35) »

41. La Banque mondiale a proposé le projet d'accord à la 55e réunion du Comité exécutif afin d'officialiser la décision sur l'élimination accélérée de la production de CFC. Elle a toutefois retiré le projet d'accord à la réunion afin d'apporter plus de précisions à la portée de la disposition punitive de l'accord.

OBSERVATIONS ET RECOMMANDATIONS DU COMITÉ EXÉCUTIF

OBSERVATIONS

42. Le projet d'accord révisé aborde toutes les dispositions des décisions ci-dessus. La disposition punitive du paragraphe 7 du projet d'accord révisé est formulée clairement afin d'englober les engagements mentionnés aux paragraphes 2 et 5. Le décaissement proposé dépend des résultats de la vérification qui sera menée par la Banque mondiale, et le décaissement de deux versements aux premières réunions de 2009 et de 2010 est raisonnable, car il s'agit de la date à laquelle la Banque mondiale propose son programme de travail annuel accompagnée des rapports de vérification.

RECOMMANDATIONS

43. Le Secrétariat recommande que le Comité exécutif approuve le projet d'accord révisé.

Annexe I

ACCORD ENTRE L'INDE ET LE COMITÉ EXÉCUTIF DU FONDS MULTILATÉRAL POUR L'ACCÉLÉRATION DE L'ÉLIMINATION DE LA PRODUCTION DE CFC

1. Cet accord complète l'accord de Consensus pour le secteur de production indienne que le Comité exécutif et l'Inde ont signé lors de la 29ième réunion («l'Accord existant»). Cet Accord représente l'entente entre l'Inde («le Pays) et le Comité exécutif en ce qui a trait à l'élimination accélérée de la production de CFC d'ici le 1er août 2008.

2. Le Pays convient de revoir son échéancier d'élimination de la production de CFC avec l'accord que :

a) L'Inde ne produirait pas plus de 690 tm de CFC, principalement pour la fabrication d'inhalateurs à doseur, jusqu'au 1er août 2008;

b) Les producteurs de CFC de l'Inde ne vendraient pas plus de 825 tm de CFC pour la production d'inhalateurs à doseur en 2008 et en 2009, se composant de 690 tonnes métriques de nouvelle production et de 135 tm retransformée du stock existant;

c) L'Inde exporterait 1 228 tm de CFC au plus tard le 31 décembre 2009;

d) L'Inde n'importerait aucun nouveau CFC vierge;

e) Tout sous-produit de qualité CFC non pharmaceutique généré par la production sous (a) est comptabilisé dans la limite de la rangée 2 du Tableau 1de l'Appendice 1 et peut être mis sur le marché;

f) Cet Accord ne couvre aucune production de CFC qui pourrait être convenue par les Parties pour rencontrer les utilisations essentielles de l'Inde; et

g) D'autres conditions dans l'Accord existant, en sus des conditions ci-haut, s'appliquent à cet Accord.

3. Le Pays consent à ce que, par son consentement à cet Accord et à l'exécution par le Comité exécutif de ses obligations de financement décrites au Tableau 2 de l'Appendice 1, il lui sera interdit de faire une demande ou de recevoir du financement supplémentaire du Fonds multilatéral en ce qui concerne l'élimination de la production de CFC.

4. Sujet à la conformité par le Pays à ses obligations établies dans cet Accord, le Comité exécutif convient en principe de fournir le financement établi à la rangée 3 du Tableau 2 de l'Appendice 1 («le Financement») au Pays. Le Comité exécutif fournira les tranches de financement liées à la nouvelle élimination accélérée lors des ***57ième et 60ième réunions du Comité exécutif***. En ce qui concerne la tranche subséquente en 2009, selon l'Accord existant, l'attribution de cette tranche suivra les termes et les conditions stipulés dans l'Accord existant.

5. Le Pays rencontrera les limites de production telles que mentionnées à la rangée 2 du Tableau 1 de l'Appendice 1. Le Pays consent aussi à permettre des vérifications techniques indépendantes, effectuées par l'agence d'exécution (Banque mondiale), dans le but de confirmer la production, les limites de retransformation, les ventes (autant nationales qu'exportées) et le stock de CFC selon l'accord.

6. Le Pays convient d'assumer l'ensemble de la responsabilité pour la gestion et la mise en œuvre de cet Accord et de toutes les activités entreprises par lui ou en son nom pour remplir ses obligations selon cet Accord. Le Pays convient aussi d'établir des politiques ou des mécanismes d'exécution pour assurer la coordination des efforts d'élimination des CFC dans les secteurs de la production et de la consommation en mettant en œuvre des politiques et des mesures réglementaires établies à l'Appendice 2.

7. Si le Pays, pour quelque raison que ce soit, ne rencontre pas les cibles pour l'élimination des substances où autrement ne se conforme pas à cet Accord, alors le Pays convient qu'il ne sera pas éligible à recevoir le Financement. À la discrétion du Comité exécutif, le financement sera rétabli selon un échéancier de distribution du Financement révisé et déterminé par le Comité exécutif une fois que le Pays aura démontré qu'il a satisfait à toutes ses obligations qui devaient être remplies antérieurement à la réception du paiement de Financement suivant selon l'échéancier de distribution du Financement. De plus, l'Inde comprend que le Comité exécutif peut réduire le financement des tranches subséquentes à raison de 1 000 $US par tonne de réductions PAO non atteinte ***dans le cadre des engagements mentionnés dans les paragraphes 2 et 5 du présent accord***.

8. Les composantes du Financement de cet accord ne seront pas modifiées en fonction de toute décision future du Comité exécutif qui pourrait avoir un effet sur le Financement sur tout autre projet dans le secteur de production ou toute autre activité liée dans le Pays.

9. ***Le Pays, le Comité exécutif et la Banque mondiale peuvent convenir d'un commun accord de prendre des mesures pour coordonner la mise en application de cet Accord***. Plus particulièrement, il fournira l'accès aux renseignements nécessaires à la Banque mondiale pour vérifier la conformité à cet Accord.

10. Toutes les ententes établies dans cet Accord sont entreprises uniquement dans le contexte du Protocole de Montréal et tel que précisé dans cet Accord. Tous les termes utilisés dans cet Accord ont la signification qui leur est attribuée dans le Protocole à moins de définition contraire aux présentes.

Appendice 1 Cibles et Financement

Tableau 1. Cibles de production

Description	Année		
	2008	**2009**	**2010**
1. Cibles sous l'Accord existant (tonnes PAO)	2 259	1 130	0
2. Production sous cet Accord (tonnes PAO)	690	0	0

Tableau 2. Financement

Description	Année		
	2008	**2009**	2010
1. Financement sous l'Accord existant (000 $US)	6 000	6 000	0
2. Soutien sous l'Accord existant (000 $US)	450	450	0
3. Financement total ajusté pour cet Accord (000 $US)	-	2 113	1 057
4. Coût de soutien pour le financement ajusté pour cet Accord (000 $US)	-	0	238
5. Financement total qui sera remis au Pays et à l'Agence d'exécution	6 450	8 563	1 295

Appendice 2 Politiques et mesures réglementaires

1. Selon le Plan d'action soumis par le Pays lors de la 54ième réunion du Comité exécutif, le Pays convient d'entreprendre les mesures suivantes :

a) Bannir la production des CFC, excluant toute production pour utilisation essentielle qui pourrait être convenue entre les Parties à l'avenir, d'ici le 1er août 2008;

b) S'assurer de la concordance de l'échéancier de consommation des Règlements sur l'ozone et des limites de consommation à la rangée 3 de l'Appendice 2 – A de l'Accord entre l'Inde et le Comité exécutif pour l'élimination nationale de la consommation de CFC en Inde axée sur le secteur des services de réfrigération;

c) L'Inde n'importera pas de nouveaux CFC/CFC vierges; et

d) Renforcer le système pour la surveillance des mouvements des stocks de CFC et des importations s'il y a lieu.

MULTILATERAL FUND FOR THE IMPLEMENTATION OF THE MONTREAL PROTOCOL ON SUBSTANCES THAT DEPLETE THE OZONE LAYER

PROJECT COVER SHEET

COUNTRY:	INDIA		**IMPLEMENTING AGENCY:**	UNDP
			COOPERATING AGENCY:	UNEP
			BILATERAL AGENCY:	Italy
PROJECT TITLE:	National Strategy for Transition to non-CFC MDIs and Plan for phase-out of CFCs in the manufacture of pharmaceutical Metered Dose Inhalers (MDIs) in India			
PROJECT IN CURRENT BUSINESS PLAN:			Yes	
SECTOR:			Aerosols	
SUB-SECTOR:			Pharmaceutical MDIs	
ODS USE IN SECTOR:	Baseline (Average of 2003 & 2004):		693.97	ODP tonnes
ODS USE IN SUB-SECTOR:	(Average of last 3 years):		704.03	ODP tonnes
PROJECT IMPACT:			704.03	ODP tonnes
PROJECT DURATION:			60	months
PROJECT COSTS:	**Investment Components**			
	Incremental Capital Costs:	US$	13,756,545	(UNDP)
	Contingencies (10%):	US$	1,375,655	(UNDP)
	Product Development Cost	US$	40,155,835	(UNDP)
	Incremental Operating Costs:	US$	5,243,899	(UNDP)
	Sub-total:	***US$***	***60,531,934***	
	Non-Investment Components			
	Technical Assistance:	US$	350,000	(UNDP)
	Policy/regulatory Support:	US$	70,000	(UNDP)
	Awareness Actions:	US$	350,000	(UNEP)
	Monitoring and Management:	US$	400,000	(UNDP)
	Sub-total:	***US$***	***1,170,000***	
	Total Costs:	**US$**	**61,701,934**	
LOCAL OWNERSHIP (Net overall):			98.4%	(Funding request adjusted)
EXPORT COMPONENT (To non-Article-5 countries):			4.9%	(Funding request adjusted)
ESTIMATED COUNTERPART FUNDING:		US$	34,942,615	(@57% from recipients)
REQUESTED GRANT:		US$	**26,759,319**	
COST EFFECTIVENESS:		US$/kg/y	38.00	
AGENCY SUPPORT COSTS:		US$	1,847,955	(UNDP)
		US$	45,500	(UNEP)
		US$	230,088	(Italy, executed by UNDP)
TOTAL COST TO MULTILATERAL FUND:		**US$**	**28,882,862**	
STATUS OF COUNTERPART FUNDING:			Letters from beneficiary enterprises obtained	
PROJECT MONITORING MILESTONES:			Included	
NATIONAL COORDINATING BODY:			Ozone Cell, Ministry of Environment & Forests	

PROJECT SUMMARY

This project articulates India's national strategy for transition to non-CFC MDIs and will result in the elimination of CFC consumption in the manufacture of pharmaceutical Metered Dose Inhalers (MDIs) in India by 2012. The project involves development of suitable alternative products including HFA-based metered dose inhalers at five enterprises who currently manufacture CFC-based MDIs in this sub-sector. Under this project, the enterprises will develop alternative formulations and implement conversions for several of their CFC-based MDI products. The substantial counterpart funding envisaged from the enterprises supplementing the requested funding, will cover formulation development and conversion of remaining products and result in complete conversion of all CFC-based MDIs in India to non-CFC alternatives.

This project is presented as an aggregate of technology conversion costs covering incremental capital and operating costs, technical assistance costs and contingencies, covering equipment and technology for manufacturing HFA-based MDIs, product development and technology transfer, project supervision and implementation and also eligible costs for provision of policy/regulatory support, institutional and technical assistance, awareness actions and monitoring & management

IMPACT OF THE PROJECT ON THE COUNTRY'S MONTREAL PROTOCOL OBLIGATIONS

The approval of this project will help India in meeting its Montreal Protocol obligations, such as phased reductions in ODS consumption as per the agreed schedules and eliminate the use of ODS in the pharmaceutical MDI sector in India by 2012.

Prepared By: UNDP with inputs from UNEP **Reviewed By:** Under review **Version:** 02 August 2008

56th Meeting of the Executive Committee of the Multilateral Fund for the Implementation of the Montreal Protocol

NATIONAL STRATEGY FOR TRANSITION TO NON-CFC MDIS AND PLAN FOR PHASE-OUT OF CFCS IN THE MANUFACTURE OF PHARMACEUTICAL METERED DOSE INHALERS (MDIS) IN INDIA

Prepared By

OZONE CELL, MINISTRY OF ENVIRONMENT AND FORESTS
GOVERNMENT OF INDIA

IN BILATERAL COOPERATION WITH
GOVERNMENT OF ITALY

With the assistance of

UNITED NATIONS DEVELOPMENT PROGRAMME (UNDP)
Lead Implementing Agency

UNITED NATIONS ENVIRONMENT PROGRAMME (UNEP)
Cooperating Agency

EXECUTIVE SUMMARY

The conversion of the majority of CFC consuming sectors in Article 5 countries under the Montreal Protocol has been completed or is in an advanced stage of implementation, however, to date only few projects to convert the production of CFC-based pharmaceutical Metered Dose Inhalers have been funded by the Multilateral Fund. The Montreal Protocol control schedule requires a complete phase out of CFCs by 2010; however, if the CFC consumption in manufacturing of MDIs is not addressed fully, it may present a significant risk of non-compliance in Article-5 MDI manufacturing countries. Since the manufacture of these drugs is essential for ensuring effective therapeutic treatment to asthma and COPD patients in these countries, there is a justifiable need for CFCs in this sector until the manufacturing can be adapted to use alternative technologies. Decisions 49/33, 50/19 and 50/20 of the Executive Committee of the Multilateral Fund, recognized this risk in countries manufacturing MDIs including India, and urged for the preparation of conversion projects in this sector, to address this issue as soon as possible.

In response to Decisions 50/19 and 50/20, India, with assistance from UNDP, has prepared a National Strategy for Transition to non-CFC MDIs that provides an overall framework to address, in a coordinated way, the sustainable phase-out of CFC use in the manufacture of MDIs in India, ensuring that its obligations under the Montreal Protocol are complied with, potential economic losses to the indigenous MDI manufacturing industry are minimized and most importantly, asthma and COPD patients are not deprived of essential and cost-effective inhaled therapy. The plan for phase-out of CFC-based pharmaceutical MDIs in India is an integral component of the National Strategy for Transition to non-CFC MDIs and prepared with assistance from UNDP as Lead Agency, UNEP as Cooperating Agency and Government of Italy as the Bilateral Cooperating Agency (with a contribution of US$ 2 million). The provisions of Executive Committee Decisions 51/34 and 54/5 have been duly considered in the preparation of this proposal.

The primary objective of this project is to sustainably phase out the consumption of CFCs used in the manufacture of pharmaceutical Metered Dose Inhalers (MDIs) in India by 2012. This involves the development of suitable alternative products, including HFA-based MDI formulations and the conversion to HFA-based MDI manufacturing technology at five eligible enterprises in India. There are over twenty MDI formulations produced in India and over forty products/strengths commercialized. This project will result in the conversion or replacement of all the current CFC-based formulations/products, taking into account the specific characteristics, status of progress in the formulation process and registered eligible products of each one of the enterprises involved. The enterprises will take responsibility of addressing the conversion of non-eligible formulations through their own resources and through the capacity built in this project. In order to achieve these conversions, each enterprise will require the development of a number of new MDI formulations and installation of suitable manufacturing equipment to allow them to produce HFA-based MDIs.

The cost of the proposed strategy and plan is presented as an aggregate of industrial conversions encompassing product development, technical assistance, incremental capital costs and incremental operating costs involved in conversion to HFA-based formulations and also support for awareness, policy and regulations, institutional and technical support and monitoring & management. All eligible drugs will be converted, keeping in mind their relevance to and specific needs of patients and ease of conversion. The funding requested covers cost of production equipment and installation, product development and transfer to the enterprises including stability testing and laboratory analysis, along with overall project supervision and implementation. The beneficiary enterprises will finance the cost of product registration and overheads.

Although the transition process from CFC-based MDIs to HFA-based MDIs in India is now partially underway, it involves an interim period during which production of both CFC-based MDIs and HFA-based MDIs need to occur simultaneously to ensure continuity in availability of proven products in the market in the interests of asthma and COPD patients. This therefore means that HFA-based MDI manufacturing equipment needs to be installed and operationalized prior to shutting down CFC-based MDI manufacturing lines.

Given the CFC consumption limits established for India currently and for the future, it is imperative to accelerate phase-out of CFCs in pharmaceutical MDIs, while ensuring availability of non-CFC MDIs as soon as possible. Considering the current situation of production of pharmaceutical grade CFCs at the global level, it is necessary to make provisions for making pharmaceutical grade CFCs available to meet the requirement of MDIs during the transition period. In this regard, the enterprises in collaboration with the Government, will determine the amount of pharmaceutical grade CFCs that would be required ensure availability of proven drugs to patients, while the HFA-based MDIs are being developed, tested and registered, leading to full-fledged commercial production.

The funding of this project by MLF to cover the eligible incremental costs is considered to be a critical component of the success of this project. In addition, flexibility in deploying approved funding by the Government is also considered an important factor, enabling Government and the beneficiary enterprises to conclude phase out of CFCs in pharmaceutical MDIs in a timely manner while protecting patients' interests and needs.

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LIST OF ABBREVIATIONS

CDSCO	Central Drugs Standard Control Organization
CFC	Chloro Fluoro Carbons
CP	Country Programme
CTC	Carbon Tetra Chloride
ExCom	Executive Committee of the Multilateral Fund
DPI	Dry Powder Inhaler
GWP	Global Warming Potential
GTZ	Gesellschaft für Technische Zusammenarbeit, Germany
HCFCs	Hydrochlorofluorocarbons
HFA	Hydro Fluoro Alkanes
IA	Implementing Agency
MDI	Metered Dose Inhaler
MLF	Multilateral Fund for the Implementation of the Montreal Protocol
MOEF	Ministry of Environment and Forests, Government of India
MP	Montreal Protocol
MT	Metric Tonnes
ODP	Ozone Depleting Potential
ODS	Ozone Depleting Substances
SMEs	Small and Medium-sized Enterprises
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme

1. INTRODUCTION

1.1 BACKGROUND OF CFC CONSUMPTION, PRODUCTION AND PHASE-OUT

India became a party to the Vienna Convention on 19 June 1991 and acceded to the Montreal Protocol on Substances that Deplete the Ozone Layer on 17 September 1992. Table-1 shows the dates of ratification by India of the Protocol and its amendments. Since the annual calculated consumption of controlled substances in India, listed in Annex-A of the Montreal Protocol, was less than 0.3 kg per capita, India was classified as a party operating under Paragraph-1, Article-5 of the Montreal Protocol and thus qualified for technical and financial assistance, including transfer of technology, through the financial mechanism of the Montreal Protocol.

Table-1: India - Dates of Ratification of Montreal Protocol and Amendments

Agreement/Amendment	Date of Ratification
Vienna Convention	19 June 1991
Montreal Protocol	17 September 1992
London Amendment	17 September 1992
Copenhagen Amendment	03 March 2003
Montreal Amendment	03 March 2003
Beijing Amendment	03 March 2003

India's Country Programme for phase-out of ozone depleting substances under the Montreal Protocol was finalized in August 1993 with the assistance of United Nations Development Programme (UNDP), The Energy and Resources Institute (TERI) and representatives of various ministries, industries and scientific institutions. The Country Programme was submitted to and approved at the 11th Meeting of the Executive Committee of the Multilateral Fund for Implementation of the Montreal Protocol, in November 1993.

India's first Country Programme Update was carried out during 2003-2006 and was submitted to and approved at the 49th Meeting of the Executive Committee in July 2006. Among the key tasks identified for the future of the Montreal Protocol programme in India, were completion of all ongoing CFC and CTC phase-out activities in various sectors by 2010, combating illegal trade in CFCs and fine-tuning ODS regulations for sustained compliance and long term management of HCFCs.

Since the approval of the original Country Programme for Phase-out of Ozone Depleting Substances in 1993, India has made significant progress in controlling the production and consumption of ODS. From a consumption level of 10,370 metric tonnes of ODS in 1991, the unconstrained demand was forecasted at about 96,000 metric tonnes by 2005.

The actual consumption of ODS by end-2006 was less than 2,000 metric tonnes annually. These reductions were achieved through technical and financial assistance from the Multilateral Fund, support from implementing agencies in implementation of approved projects and activities and due to proactive policy and regulatory actions by Government of India.

Table-2 below summarizes approved ODS phase-out activities, both completed and ongoing, in various sectors:

Table-2: Summary of ODS Phase-out Activities in All Sectors (as of end-2006)

Sector	Number of Projects	Funding (US$)	Phase-out (ODP tonnes)
Aerosols Sector	27	3,227,739	689
Foams Sector	159	34,785,641	4,373
Firefighting Sector (Halons)	18	2,458,701	2,162
Refrigeration & Air Conditioning Sector	49	32,254,823	3,203
Solvents Sector	41	61,358,042	12,966
Production Sector (including Halons)	2	84,600,000	22,988
Total	**296**	**218,684,946**	**46,381**

Of the above-mentioned activities, over 80% of the activities in terms of ODS phase-out are now completed. All of the individually approved projects have been completed. The implementation of performance-based sector and national-level phase-out plans in the Foams, Refrigeration & Air Conditioning, Solvents and Production sectors is mostly completed, with the respective agreed annual phase-out targets met or exceeded so far.

Three main national/sector-level ODS phase-out activities, governed by multi-year performance-based agreements between Government of India and the Executive Committee of the Multilateral Fund for the Implementation of the Montreal Protocol, are currently under implementation:

NCCOPP (National CFC Consumption Phase-out Plan)

This project combines the CFC phase-out activities in the Foams, Refrigeration (Manufacturing) and Refrigeration (Servicing) Sectors, into a single agreement beginning March 2004. The agreed annual consumption and phase-out targets under the NCCOPP are as below:

Table-3: Agreed Annual CFC Consumption & Phase-out Targets under NCCOPP from 2004-2010

Year	2004	2005	2006	2007	2008	2009	2010
ODS Consumption limit (ODP tonnes)	3,489	1,814	960	464	317	172	
ODS Phase-out (ODP tonnes)	1,675	854	496	147	145	172	0

From 2007, the phase-out activities under the Foam Sector and Refrigeration (Manufacturing) Sectors are completed, and the focus of the NCCOPP is predominantly on building sustainable infrastructures to progressively reduce demand for CFCs in the Refrigeration (Servicing) Sector and transition to zero-ODP alternatives. The key challenges identified are as below:

- Availability of adequate CFCs for legitimate servicing needs beyond 2010, through stockpiling, recovery/recycling and reclamation
- Accelerating retrofitting/replacement of CFC-based equipment to reduce dependence on CFCs for servicing
- Adequate capacity building and awareness at the field-level service establishments and technicians to minimize CFC emissions and losses

Intensive monitoring of the investment, technical assistance, training and capacity building components would be needed to ensure that India complies with the agreed phase-out targets.

CTC Phase-out Plan

The project addresses the production and consumption of non-feedstock CTC. The agreed annual production and consumption targets are as below:

Table-4: Agreed Production and Consumption Targets under CTC Phase-out Plan

Consumption/Year	2005	2006	2007	2008	2009	2010
Maximum Consumption (ODP MT)	1,726	1,147	708	268	48	0
Maximum Production (ODP MT)	1,726	1,147	708	268	48	0

The implementation of this project is underway. The key challenges identified are as below:

- Adequate assistance to small scale CTC users in the textile and metal cleaning industry, including cost-effective availability of substitutes
- Ensuring timely phase-out of CTC in the large users in the process agent and solvents sectors

Intensive monitoring of the investment, technical assistance, training and capacity building components would be needed to ensure that India complies with the agreed phase-out targets. Appropriate institutional arrangements are in place to address the additional obligations such as performance verification and reporting.

Production Sector Gradual Phase-out Plan

This agreement is in place since 1999. The agreed annual limits on CFC production are shown in Table-5 below:

Table-5: Agreed Maximum Allowable CFC Production Levels from 1999-2010

Year	Production (metric tonnes)	Year	Production (metric tonnes)
1999	22,588	**2005**	11,294
2000	20,706	**2006**	7,342
2001	18,824	**2007**	3,389
2002	16,941	**2008**	2,259
2003	15,058	**2009**	1,130
2004	13,176	**2010**	0

Mechanisms for monitoring, reporting and verification as per the agreed protocols are already established and would continue to be implemented. So far India has complied with all provisions of the agreement governing this project.

At the 54th Meeting of the Executive Committee in April 2008, India agreed to cease its production of CFCs from 01 August 2008, over a year in advance of the earlier agreed closure date. In accordance with Decision 54/35, India can produce a maximum of 690 metric tonnes of CFCs until 01 August 2008, primarily for use in manufacturing of CFC-based MDIs. An additional quantity of 135 metric tonnes of CFCs can be used from existing stocks after reprocessing, for manufacturing CFC-based MDIs. The Indian producers also would need to export 1,228 metric tonnes of CFCs prior to 31 December 2009.

1.2 CFC CONSUMPTION TRENDS IN MDI MANUFACTURING

There are currently five manufacturers of MDIs in India (more details on these manufacturers are provided ensuing chapters). The production of MDIs has grown significantly in India in recent years, increasing from about 29 million units in 2003 to about 55 million units in 2007.

The pharmaceutical grade CFCs needed for manufacturing CFC-based MDIs are sourced from both domestic CFC producers and through imports. Table-6 below shows the source of CFC consumption in MDI manufacturing in India from 2003 onwards:

Table-6: CFC Consumption in MDI manufacturing in India

CFC Consumption/Year	2003	2004	2005	2006	2007
Consumption (ODP tonnes)	578.91	742.81	740.41	763.62	608.07
Sourced indigenously (ODP tonnes)	578.91	742.81	683.41	591.12	505.47
Sourced through imports (ODP tonnes)	0.00	0.00	57.00	172.50	102.60

While examining the consumption trends for CFCs in India in general and in the MDI manufacturing in particular, the following factors need to be carefully considered:

(a) It would be useful to note that during the preparation of the National CFC Consumption Phase-out Plan (NCCOPP), *the consumption of CFCs in the MDI manufacturing sub-sector was not reported and therefore not taken into account*.

(b) The consumption in the Refrigeration and Air Conditioning Servicing Sector, as reported in the CP progress data reporting was 1,105 ODP tonnes in 2006. While this was below the agreed consumption limit of 1,147 ODP tonnes for 2006 and while it is being addressed through ongoing activities under the NCCOPP, it is evident that the CFC consumption in MDI manufacturing for 2006 (700.02 ODP tonnes) as reported in the CP progress data reporting, constitutes a significant part of the overall national consumption and presents a challenge for future compliance.

(c) Against the backdrop of ExCom Decision 54/35, which stipulates a limit on availability of CFCs for consumption in India, i.e., a maximum of 825 ODP tonnes would be available for consumption during 2008 and 2009, there would be an inevitable "competition" between the needs for CFCs in MDI manufacturing and the needs of the Refrigeration and Air Conditioning Servicing Sector. This situation introduces a peculiar and delicate challenge for designing appropriate policies and regulations to carefully balance the legitimate needs of SMEs in the Refrigeration and Air Conditioning Servicing Sector and the justifiable health needs of vulnerable asthma and COPD patients. Economical access to proven and effective drugs needs to be maintained in a developing country such as India and would remain the cornerstone of future regulatory and policy interventions.

(d) While the consumption of CFCs in MDI manufacturing shows a decline from 2006 to 2007, it still constitutes a significant portion of the agreed allowable total consumption and significantly in excess of the agreed consumption limits in 2008 and 2009. This situation poses a significant risk of non-compliance post-2007 and calls for urgent interventions to ensure timely and smooth transition to non-CFC MDI manufacturing.

2. SITUATION ANALYSIS

2.1 COUNTRY BACKGROUND

2.1.1 Geography and Demographics

Located in South Asia, India is the seventh-largest country by geographical area and the second most populous country in the world. India has a coastline of over 7,000 km, bounded by the Indian Ocean on the south, the Arabian Sea on the west, and the Bay of Bengal on the east. India borders Pakistan to the west; People's Republic of China, Nepal and Bhutan to the north-east; and Bangladesh and Myanmar to the east.

India has a population of about 1.1 billion (2006), comprising approximately one-sixth of the world's population. India occupies 2.4% of the world's land area, but supports over 16% of the world's population and 21% of the world's global burden of disease. Almost 40% of Indians are younger than 15 years of age. About 70% of the people live in more than 550,000 villages, and the remainder in more than 200 towns and cities. The standard of living in India is projected to rise sharply in the next half-century; it currently battles high levels of poverty, persistent malnutrition, and environmental degradation.

The weather conditions in India are strongly influenced by the Himalayas in the north and the Thar Desert in the northwest. Meteorologists divide the year into four main seasons for most of the country: monsoon, summer, winter and a mild autumn.

India is categorized as a tropical country with high propensity to infectious diseases. These include food or waterborne diseases such as bacterial diarrhea, hepatitis A and E, typhoid, vector borne diseases such as dengue and malaria, water contact diseases such as leptospirosis and animal contact disease such as rabies. The geographical spread of the country frequently affected by floods and storms and low levels of per capita income with significant poverty particularly in rural areas, essentially drive the need for extensive and affordable healthcare solutions. WHO in their Country Cooperation Strategy Brief has indicated that India is experiencing high growth in tuberculosis and chest related diseases.

2.1.2 Asthma and COPD in India

Asthma and Chronic Obstructive Pulmonary Disease (COPD) are considered a serious health problem worldwide owing to their magnitude in terms of morbidity, mortality and disability especially in ill-managed patients. Their impact on patients and their relatives as well as consequent social costs, underline the need for comprehensive and coordinated responses.

COPD is a significant health problem in India. Among the non-communicable diseases, bronchial asthma is considered to be one of the leading causes of hospital admissions in India. The economic and social cost of this disease is sizeable due to the disabling effect associated with frequent episodes of decompensation.

Given the size of the country and its population and given the geographic and socio-political diversity in India, collection of reliable national statistics on diagnosis and management of diseases is an enormously challenging and expensive proposition. However, some indicative statistics can be presented.

From a 1996 survey, COPD was prevalent in 7.7% of the population in India. The estimated number of adult patients of age 30 or more was 12.36 million. More recent studies estimate about 15 million persons affected by asthma in India.

Data from a few population-based studies in adults has recently become available. In a study conducted as part of the European Community Respiratory Health Survey in 2000, asthma prevalence in adults aged 20-44 years in India was reported to be 3.5% using 'clinician diagnoses' and 17% using a broader definition (which included a prior physician diagnosis and/or a positive bronchioprovocation test).

Studies on mortality and morbidity from Acute Respiratory Infections (ARI) in India indicate that ARI is the most significant cause of child mortality.

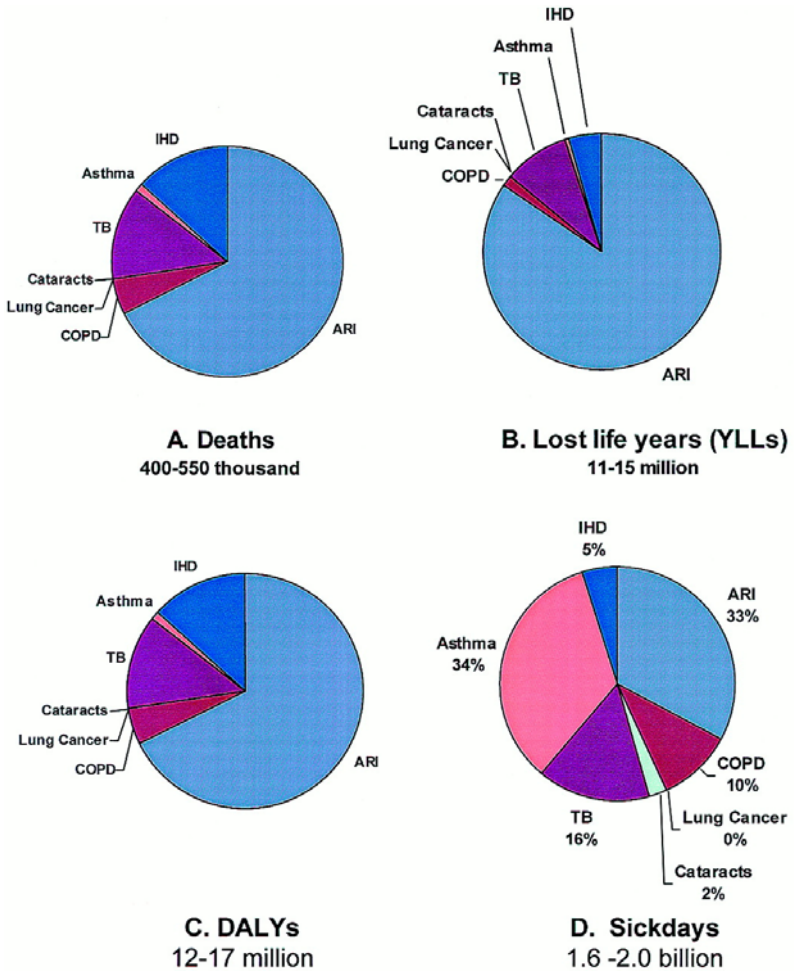


Figure-1: Annual Health Burden from Indoor Air Pollution in India
(Source: School of Public Health, University of California – Berkeley, 2000)

Figure-1 above indicates the incidence and contribution of respiratory disorders including Asthma, COPD, tuberculosis, ARI, etc. to the national health burden from Indoor Air Pollution in India.

2.1.3 Treatment

The most preferred route for therapeutic administration of drugs into lungs for respiratory disorders, on which there is international consensus by health authorities, is inhalation. Inhalation therapy with aerosols allows achieving high concentration of drugs such as corticosteroids, beta adrenergics and anticholinergics in airways, while diminishing their adverse side effects when used through other routes of administration. The treatment generally requires a regular administration of one or more drugs through metered dose inhalers (MDIs) or in some cases dry powder inhalers and less frequently through nebulizers. Inhalation treatment is administered by metered-dose inhalers that represent almost 70% of prescribed inhalers. The remaining 30% are dry powder inhalers and small quantity of nebulizers.

The most widely used propellants for metered dose pharmaceutical aerosols in India are CFCs. CFCs are non-toxic, non-reactive and non-flammable, with no odor, no flavor and excellent solvent action. Since CFCs will need to be phased out from 2010, alternative propellants, mainly HFAs, have been introduced in the past decade or more to replace CFCs and have already cleared clinical testing for several formulations.

The main categories of drugs used for treatment of Asthma and COPD are as below:

Category A: Short-acting beta-antagonist bronchodilators such as Salbutamol, Terbutaline and Fenoterol

Category B: Steroids such as Beclomethasone, Budesonide and Fluticasone

Category C: Non-steroid anti-inflammatory agents such as Disodium Cromoglycate and Nedochromil

Category D: Anti-cholinergic bronchodilators such as Ipratropium and Oxytropium

Category E: Long-acting beta-antagonist bronchodilators such as Salmeterol and Formoterol

Category F: Combination of products with two or more active ingredients.

MDI usage in India has seen a significant increase in the last decade. Initially, MDIs were prescribed by medical practitioners as a “last resort” solution possibly due to lack of awareness and limited availability of the product. With time and due to promotion efforts undertaken by the pharmaceutical industry and asthma associations, the adoption of MDIs as a treatment option for respiratory disorders has increased. As per industry estimates, asthma and COPD are prevalent in about 100 million people in India (about 10% of the population of the country). In addition, patients suffering from other diseases of the throat and other respiratory ailments, also use MDIs. Thus, cost effective availability of MDIs and/or similar solutions is critical for a country like India.

The MDI usage in India is predominantly in urban areas. However, the Ministry of Health and Family Welfare launched a National Rural Health Mission (2005-2012) which involves expansion of public expenditure on rural health care delivery for improved access to healthcare for rural populations particularly women, children and economically disadvantaged persons. Through the NHRM, medical drugs and devices are provided at subsidized costs or no costs to such patients, thus resulting in an increase in the number of patients gaining access to remedies such as MDIs particularly in the rural areas. This has contributed to the significant increase in MDI production over the past few years.

2.2 INSTITUTIONAL FRAMEWORK

2.2.1 Institutional Arrangements for the Montreal Protocol

Government of India has designated the Ministry of Environment & Forests as the national coordinating body for the Montreal Protocol in India. The functions and responsibilities of the Ministry of Environment & Forests as the designated national authority and nodal ministry include notification of regulations pertaining to the Montreal Protocol, issues related to international cooperation, maintaining and managing data on production, imports, exports and consumption of ODS, monitoring of implementation of Montreal Protocol activities, interacting with other line ministries on technical and financial matters pertaining to implementation of activities, liaising with scientific, technical and other public institutions for technical matters, representing India at various multilateral meetings and discussions, etc.

The Ministry of Environment & Forests has since 1991, established a special directorate (Ozone Cell) within the Ministry, which is the focal point for managing and coordinating the implementation of the Montreal Protocol activities in India.

The Ministry of Environment & Forests has also created an Empowered Steering Committee (ESC) with the approval of the Cabinet, which is an apex body mandated for formulation and review of policy actions for Montreal Protocol implementation. The ESC is assisted by three standing committees, for advice on Technology and Finance, Small-scale Industries and Monitoring/Evaluation.

Figure-2: Institutional Arrangements for the Montreal Protocol in India

The Ozone Cell established a Project Management Unit (PMU) for implementation of the CFC Production Sector Phase-out Project in February 2002. The functions of the PMU include implementation and review of ODS phase out plans, assisting Ozone Cell in monitoring and implementation of ODS phase out activities, monitoring the production quota and export licensing systems, coordination of training, seminars and awareness activities for various stakeholders, etc. The governing body of the PMU consists of Additional Secretary (MOEF) as President, Joint Secretary (MOEF) as Vice-President, representatives from Department of Chemicals and Fertilizers, Ministry of Commerce and Industry, Confederation of Indian Industry (CII), Director-General Foreign Trade with Director–Ozone Cell and Joint Director-Ozone Cell as members.

Figure-2 above depicts the organizational and institutional structure of management of the Montreal Protocol in India.

2.2.2 Institutional Arrangements related to pharmaceutical MDIs

The Ministry of Health and Family Welfare is the nodal ministry designated by Government of India for all matters pertaining to health and family welfare, some of which are notification of regulations pertaining to health, monitoring and controlling drugs, policy matters pertaining to public health and prevention of food adulteration, formulating national health policies, designing and managing national health programmes, medical education and training, international cooperation, etc. The Ministry has administrative control over 29 autonomous/statutory bodies and three public sector undertakings. Figure-3 below shows the organizational arrangement.

The Directorate General of Health Services (DGHS) is an office which serves as a repository of technical knowledge attached to the Department of Health, Ministry of Health and Family Welfare. The DGHS renders technical advice on all medical and public health matters and in the implementation of various health programmes. In order to implement policies and programmes of the Ministry in an effective manner, DGHS is supported by three subordinate offices at various locations in the country.

The Central Drugs Standard Control Organization (CDSCO) functions under the DGHS and is responsible for the approval of licenses for specified category of drugs under the Drug and Cosmetics Act 1940 (updated until 2005). The CDSCO has the mandate to set standards for drugs, cosmetics, diagnostics and devices, approve new drugs and devices, review, approve and conduct clinical trials, regulate the standards of imported drugs, screen drug formulations, monitor adverse drug reactions, control quality of imported drugs, coordinate activities of state-level organizations and provide expert advice with a view to bring about uniformity in the enforcement of the Act. The CDSCO also provides guidance on technical matters, conducts training programmes for regulatory and enforcement officials and analysts and publishes the Indian Pharmacopeia.

The CDSCO is administered by the Drugs Controller General of India and is supported by four zonal offices, three sub-zonal offices and seven offices at ports of entry. In addition, CDSCO also operates six laboratories for quality control and testing of drugs.

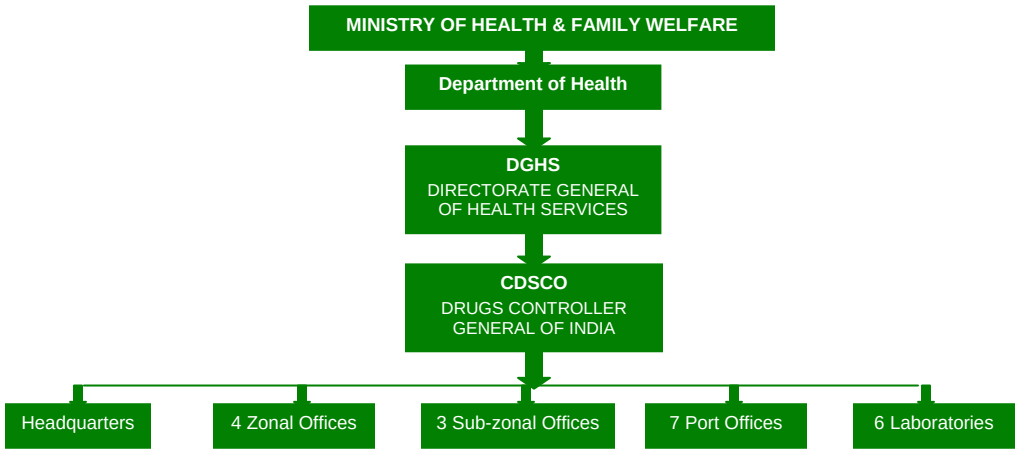


Figure-3: Institutional Arrangements for Drugs in India

2.2.3 Policies and Regulations

Policies and Regulations pertaining to Montreal Protocol

India's Country Programme for phasing out ODS, established the following guiding principles reflecting national priorities for formulating appropriate policy and regulatory instruments:

- To strengthen national institutions for monitoring and managing the ODS phase-out, and formulation and implementation of appropriate policies.

- To assist indigenous industries for conversion to non-ODS technologies through the Montreal Protocol financial mechanism, while ensuring that the SMEs and other unorganized tiny enterprises are fully compensated for conversions, including retraining

- To minimize economic dislocation either through closure of manufacturing units, loss of productive capacity, or through major capital expenditure that could become obsolete in future.

- To maximize indigenous production by encouraging technology transfer for and local production of non-ODS substitutes

- To give preference to one-time replacements

- To minimize obsolescence costs by promoting recycling, retrofitting and drop-in substitutes to prolong economic life of existing equipment, until new replacement technologies become mature, cost-effective and available

- To institute decentralized management of ODS phase-out activities and arrangements to facilitate feedback for smooth implementation.

- To facilitate development of new standards and certification systems for products and processes including those for safety

- To integrate the ODS phase-out activities closely with the growth in the various industrial sectors, economic reforms, etc.

- To evaluate alternatives to ODS and the available substitute technologies on a continuing basis, so as to lead to wider adaptation and dissemination.

- To periodically reassess and revise the Country Programme to reflect technological developments, progress in implementation of ODS phase-out activities and evolving trends in the growth of the various industrial sectors.

Recognizing the importance of establishing an effective regulatory framework for the successful implementation of the Montreal Protocol Programme and consistent with the guiding principles for developing policies, MOEF initiated actions to create one of the most comprehensive and forward-looking regulatory frameworks in the world, to support the various ODS phase out measures in India.

In exercise of the powers conferred by sections 6, 8 and 29 of the Environment Protection Act of 1986, Government of India notified the Ozone Depleting Substances (Regulation and Control) Rules 2000, which formally came in to effect from January 2000. The provisions of this comprehensive legislation are summarized as below:

General

- Every entity that produces, uses, imports, sells, stocks, reclaims or destroys ODS has to maintain records and file reports as specified.
- Every entity, which has received technical and/or financial assistance from any international agency or financial assistance from Government of India including duty exemptions, is required to maintain records and file reports as specified.
- Mandatory registration for reclamation and destruction of ODS. All registrations will be valid for specified periods, after which, they are required to be renewed.

ODS Production

- Mandatory registration with MOEF
- Restriction on production levels as per "base level" and specified time-bound reductions.
- Prohibition on creating new capacity or expansion of capacity

ODS Consumption

- Ban on new capacity or expansion of capacity for production of ODS-based equipment.
- Mandatory registration with designated authorities
- Declaration requirement in prescribed format at the time of procurement of ODS
- Restrictions on production of ODS-based products in various sectors from 2003

ODS Trade

- Mandatory registration for exporters & importers with designated authorities
- Import of ODS and ODS containing equipment only against license
- Export restricted to countries who are signatory to the Montreal Protocol against quota
- Trade in controlled substances with countries not party to the Montreal Protocol is prohibited.
- The export of Annex-A and Annex-B substances to Non-Article-5 Parties is prohibited.
- The import and export of all Annex-A and Annex-B substances are subject to licensing.
- Import of Equipment containing ODS was subjected to licensing

Fiscal Incentives

- Full exemption from Customs and Excise tariffs on capital goods required to implement ODS phase out projects. Duty exemptions also extended to capital goods required for establishing new capacity with non-ODS technology.
- Indian financial institutions were advised not to finance/refinance new ODS producing/consuming enterprises. The Tariff Advisory Committee (a statutory body under the Insurance Act, 1938) advised to grant suitable discounts on fire insurance premiums if alternative agents are used to replace Halons.

Policies and Regulations pertaining to pharmaceutical MDIs

The National Health Policy of 2002 (NHP) prioritizes key policy actions focusing on:

- Eradication measures for diseases such as polio, leprosy, black fever and filariasis, mortality reduction of 50% due to vector/water-borne diseases and achieve zero growth in HIV aids
- Establish an integrated network for health surveillance, national health accounts and health statistics
- Establish a comprehensive network of primary healthcare facilities linked to health education and encompassing a referral system
- Expand public health services and affordable and equitable access to drugs and devices through promotion of indigenous generic drugs and vaccines
- Establish uniform standards for deployment of healthcare personnel and extend continuing education and retraining facilities for healthcare personnel
- Intensify dissemination and awareness programmes for health-related information
- Promote medical research on therapeutic drugs and vaccines for tropical diseases
- Establish regulatory mechanism to ensure quality and standards in private sector healthcare
- Promote and increase involvement of civil society in disease control and healthcare
- Efficient regulation and enforcement of quality standards for drugs

At present the following laws and the regulations made thereunder, govern the manufacture, sale, import, export and clinical research of drugs and cosmetics in India.

- The Drugs and Cosmetics Act, 1940
- The Pharmacy Act, 1948
- The Drugs and Magic Remedies (Objectionable Advertisement) Act, 1954
- The Narcotic Drugs and Psychotropic Substances Act, 1985
- The Medicinal and Toilet Preparations (Excise Duties) Act, 1956
- The Drugs (Prices Control) Order 1995 (under the Essential Commodities Act)

In addition, there are some other laws which have a bearing on pharmaceutical manufacture, distribution and sale in India. The important ones are:

- The Industries (Development and Regulation) Act, 1951
- The Trade and Merchandise Marks Act, 1958
- The Indian Patent and Design Act, 1970
- The Factories Act

The primary law in India concerning pharmaceutical MDIs is the Drugs and Cosmetics Act 1940 (amended up to 2005). Some of the key features of the rules and regulations notified under this Act and pertaining to pharmaceutical MDIs are as below:

General

- The competent licensing authority is the Drugs Controller General of India (DCGI)
- Special committees comprising of subject experts and DCGI representatives will be set up for evaluation of the concerned devices and the committees are empowered to formulate their own benchmarks and procedures for such evaluation and for standards to which such devices should conform.

Imports

- Import is subject to licensing and no import shall take place prior to issuance of license

Manufacturing

- Manufacturing is subject to licensing and no manufacturing can take place prior to issuance of the license
- Applicants shall provide complete information on the details of the product and manufacturing to the licensing authority
- For new products or products without benchmark certification, Expert Committees will be set up for evaluation and assessment. The Committee(s) will submit their report and recommendation to the licensing authority
- In the event of approval, the state-level authorities will carry out a joint inspection and verification, after which the license may be issued

Registration for Manufacturing and Import

- A registration certificate in respect of the product and premises in which it is manufactured is required and the application for this certificate needs to be made to the competent authority by the manufacturer or importer along with required information and fees
- Registration is required separately for each medical device which has a different material, ingredient and/or a method of use
- Registration can be subject to such conditions as may be applied by the competent authority
- Registration is normally valid for five years and is renewable, unless canceled earlier.

Sale

- Sale of such medical devices requires a license and no sale shall be carried out prior to issuance of a license

2.3 MDI MANUFACTURING IN INDIA

2.3.1 CFC-based and HFA-based MDI manufacturing

There are currently five manufacturers of pharmaceutical MDIs in India. Table-7 below shows the MDI production levels in India from 2003 to 2007:

Table-7: MDI Manufacturing in India (2003-2007)

Manufacturer	Total Production (in million units)				
	2003	2004	2005	2006	2007
CFC-based MDIs					
Cadila Healthcare Ltd.	Blanked for reasons of confidentiality				
CIPLA Ltd.					
GlaxoSmithKline Pharmaceuticals Ltd.					
Midas-Care Pharmaceuticals Ltd.					
Sun Pharmaceutical Industries Ltd.					
Sub-total (CFC-based MDIs)	28.83	35.69	31.77	39.16	31.19
HFA-based MDIs					
CIPLA Ltd.	Blanked for reasons of confidentiality				
Midas-Care Pharmaceuticals Ltd.					
Sun Pharmaceutical Industries Ltd.					
Sub-total (HFA-based MDIs)	0.47	1.23	4.06	11.19	24.32
Grand Total	29.30	36.92	35.84	50.35	55.51

Figure-4 below depicts the production volumes of CFC and HFC-based MDIs in India during 2003 to 2007:

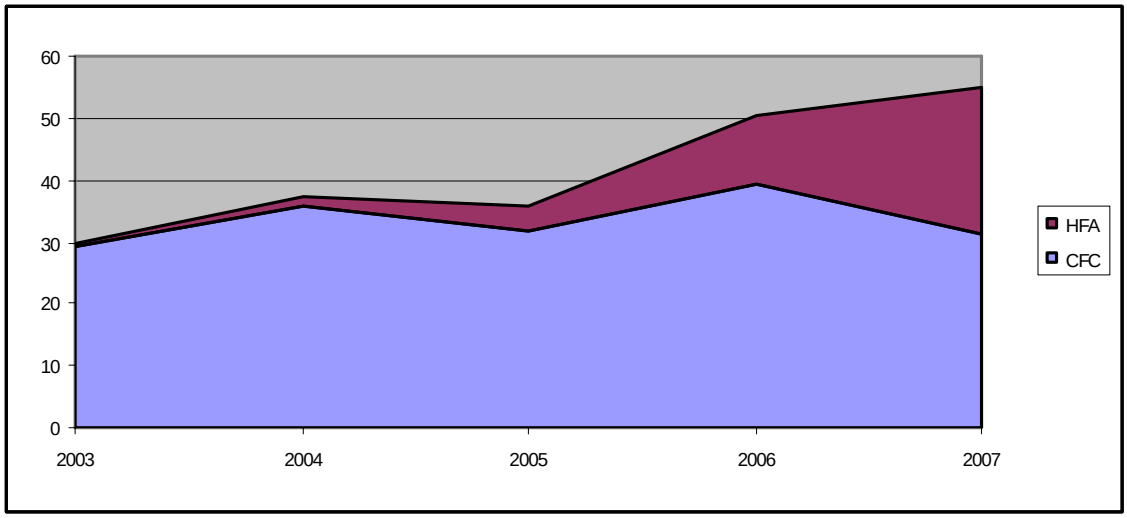


Figure-4: CFC-based and HFC-based MDI production in India (2003-2007)

As seen in the table and graphic above, there is a clear growth in demand for MDIs in India in the past few years. The growth is likely due to more widespread use of MDIs in the asthma and COPD patient population which is consistent with global trends. While the share of HFA products is growing in number of units produced, only two of the seven manufacturers have developed HFA formulations for a limited number of drugs. This implies that there is still a major work in formulation, development and registration of new HFA products for the coming years. Given the limitation on availability of CFCs in the near future, the majority of the companies are in the need to have these products commercially available as soon as possible.

In response to the control measures established by the Montreal Protocol, MDI manufacturers in India have already initiated a process to identify alternatives to CFC-based MDIs. Some of them have been able to formulate some products based on HFA after significant investments on research and development. However, challenges to offer HFA-based MDIs exist, due to a combination of reasons which include higher costs of production, low availability of materials, higher cost of equipment, lost of production capacity and restrictions on the retail price of the products under the Drug Price Control Order, which makes it difficult for manufacturers to recover the additional costs. There are still many products being produced with CFCs and there will be need for CFCs in the next few years.

It takes between 9 months and two years to develop a new formulation that includes planning, formulation development, scale-up and stability testing. Based on the regulatory framework, the time needed for registering a new product can vary from 6 months to a year. Thus the overall timeframe for introducing new products in the market takes between 15 months and three years.

Considering the above background, it is possible to appreciate the constraints in context of demand growth, time, resources, regulatory framework and pricing maneuverability faced by MDI manufacturers in India in transitioning from CFC-based MDIs to non-CFC or HFC-based products.

2.3.2 Domestic Sales and Exports of CFC-based MDIs

A portion of the total CFC-based MDIs produced in India is exported to both non-Article-5 and Article-5 countries. Table-8 below shows the quantities of CFC-based MDIs for the domestic market and exports in recent years:

Table-8: Domestic Sales and Exports of CFC-based MDIs

Parameter	Total (in million units)				
	2003	2004	2005	2006	2007
Total Domestic Sales	14.90	15.72	16.21	18.27	10.33
Exports to non-Article-5 countries	0.42	0.05	0.42	0.47	1.53
Exports to Article-5 countries	13.52	19.93	15.16	20.43	19.30
Total Exports	13.94	19.98	15.57	20.90	20.82
Total Production	28.83	35.69	31.77	39.16	31.19
Exports to non-Article-5 countries (% of total)	1.5%	0.1%	1.3%	1.2%	4.9%

It is seen from the above that before 2007 exports of CFC-based MDIs to non-Article-5 countries were around 1% of the total production. Only in 2007 exports increased to a level that constituted 4.9% of the total production of CFC-based MDIs. Only one of the enterprises (CIPLA) is exporting to Non-Article 5 countries.

2.3.3 Breakdown of CFC Consumption in MDI manufacturing by enterprise

The CFCs required for the MDIs manufactured in India are sourced from domestic CFC producers as well as imported from other countries. Table-9 below shows the consumption of CFCs in MDI manufacturing in India in recent years for each manufacturer:

Table-9: Breakdown of CFC Consumption in MDI manufacturing by enterprise (2003-2007)

Manufacturer	CFC Consumption (ODP tonnes)				
	2003	2004	2005	2006	2007
Cadila Healthcare Ltd.	Blanked for reasons of confidentiality				
CIPLA Ltd.					
GlaxoSmithKline Pharmaceuticals Ltd.					
Midas-Care Pharmaceuticals Ltd.					
Sun Pharmaceutical Industries Ltd.					
Total	**578.91**	**742.81**	**740.41**	**763.62**	**608.07**

Figure-5 below depicts the relative CFC consumption of the five MDI manufacturers (2007):

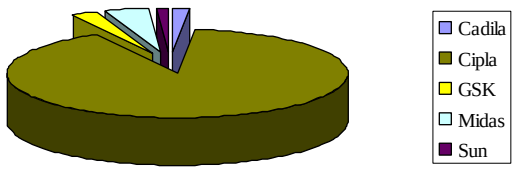


Figure-5: Relative CFC Consumption of the MDI manufacturers (2007)

2.3.4 Industry Structure

India caters to the needs of inhalation therapy for patients suffering from asthma, COPD and other respiratory ailments, through an established local MDI manufacturing capacity, which provides affordable MDI products to these patients. All MDIs consumed in India are locally manufactured.

The MDI manufacturing industry in India has experienced a growth of about 15-20% annually in the past decade. In 2007, over 50 million units of MDIs were sold in India, which has a population of about 1.1 billion and a patient base of about 15-20 million. Yet, the per capita use of MDIs in India is quite low, as compared to for instance UK, where over 60 million units of MDIs were sold for a population of 60 million and a patient base of about 6 million. This implies that that production of MDIs in India will continue to grow to provide affordable access to MDIs to the large number of asthma and COPD patients.

There were historically a total of seven MDI manufacturers in India. Of these, AstraZeneca Pharma India Ltd. has 100% non-Article-5 ownership and sub-contracts its products to one of the other manufacturers. Natco Pharma Ltd., an indigenously owned enterprise, has ceased production of MDIs as of 2007. Thus, currently five manufacturers of MDIs are operational in India. Table-10 below shows the MDI production breakdown by enterprise in India in 2007:

Table-10: MDI production breakdown by enterprise (2007)

Manufacturer	Total MDI production in 2007 (million units)	Share of total production
Cadila Healthcare Ltd.	Blanked for reasons of confidentiality	
CIPLA Ltd.		
GlaxoSmithKline Pharmaceuticals Ltd.		
Midas-Care Pharmaceuticals Ltd.		
Sun Pharmaceutical Industries Ltd.		
Total	55.51	100.0 %

Figure-6 below depicts the total production of MDIs and respective manufacturer shares pictorially:

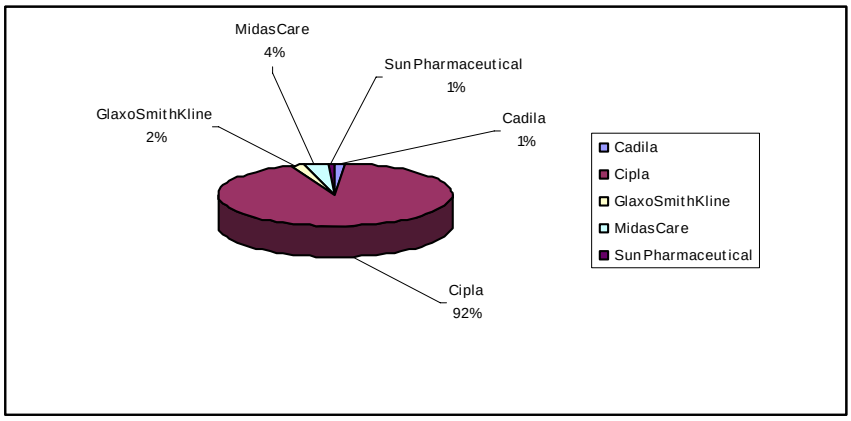


Figure-6: MDI Production breakdown by enterprise in 2007

Table-11 below shows the baseline information and products manufactured by these enterprises:

Table-11: Baseline Data for MDI manufacturers in India

PARAMETER	ENTERPRISE DATA				
	Cadila Healthcare Ltd.	**CIPLA Ltd.**	**GlaxoSmithKline Pharmaceuticals Ltd.**	**Midas-Care Pharmaceuticals P. Ltd.**	**Sun Pharmaceutical Industries Ltd.**
Indigenous Ownership (%)	100	100	49.33	100	100
Date of Establishment	1952	1935	1924	1986	1983
Number of MDI plants	1	3	1	1	1
Number of production lines for CFC-based MDIs	1	7	1	2	1
Date of establishment of CFC-based MDI capacity	2002	1995 -2002 - 2003	1989	1993-1994	1999-2000
Lines Output	25 – 28 can/min	455 can/min CFC + 160 can/min HFA	32 can/min	24 – 26 can/min	20 – 23 can/min
Annual capacity of CFC-based MDI production (based on single shift and 240 working days/year)	2.5 – 2.8 million	42 million CFC + 6 million HFA	3.3 million	3.38 million*	1.9 – 2.1 million
Products manufactured (strengths)	1 Salbutamol (1) 2 Budenoside (2) 3 Formoterol Fumarate (1) 4 Ipratropium Bromide (1) 5 Budenoside + Formoterol Fumarate (3) 6 Salbutamol+ Ipratropium Bromide (1) 7 Salmeterol + Fluticasone Propionate (3) 8 Tiotropium Bromide (1) 9 Tiotropium Bromide + Formoterol Fumarate (1) 10.Formoterol Fumarate + Fluticasone Proppionate(2)	1 Isoprenaline Sulphate (1) 2 Beclomethasone Nasal (1) 3 Sodium Cromoglicate (2) 4 Ipratropium Bromide (2) 5 Ipatropium + Salbutamol (1) 6 Tiotropium Bromide (1) 7 Tiotropium Bromide + Formoterol (1) 8 Levoalbuterol (1) 9 Levalbuterol + Ipatropium (1) 10 Belcomethasome + Formoterol (2) 11 Salbutamol (1) 12 Beclomethasone (4) 13 Salbutamol + Beclomethasone (1) 14 Budesonide(2) 15 Fluticasone Propionate (4) 16 Salmeterol Xinafoate (1) 17 Formoterol (1) 18 Fluticasone + Salmetrol (3) 19 Budesonide + Formoterol(3) 20 Troventol (1) Ciclesonid. HFA (2) 21 Ciclesonide + Formoterol HFA (2)	1 Salbutamol (1) 2 Beclomethasone (2)	1 Salbutamol (2) 2 Ipratropium Bromide (2) 3 Salbutamol + Beclomethasone(1) 4 Formeterol Fumurate (1) 5 Formoterol + Budesonide (3) 6 Beclometasone (4) 7 Budesonide (3) 8 Salmeterol + Fluticasone (3) 9 Ipratropium + Salbutamol (1) 10 Salmeterol (1) 11 Sodium Cromoglicate (2) 12 Terbutaline (1) 13 Tiotropium Bromide (1) 14 Tiotropium Bromide + Formoterol (1) 15 Levosalbutamol(1) 16 Levosalbutamol + Beclometasone (1) 17 Levosalbutamol + Ipatropium Bromide (1) 18 Ciclesonide (2) 19 Ciclesonide + Formeterol Fumurate (1) 20 Tiotropium + Formoterol + Budesonide (2) 21 Tiotropium +	1 Salmeterol + Fluticasone Propionate (3) 2 Fluticasone Propionate (3) 3 Budesonide (2) 4 Salbutamol (1) 5 Formoterol + Budenoside (3) 6 Tiotropium Bromide (1) 7 Tiotropium Bromide + Formoterol (1) 9 Ciclesonide HFA (2)

PARAMETER	ENTERPRISE DATA				
	Cadila Healthcare Ltd.	**CIPLA Ltd.**	**GlaxoSmithKline Pharmaceuticals Ltd.**	**Midas-Care Pharmaceuticals P. Ltd.**	**Sun Pharmaceutical Industries Ltd.**
		22 Budesonide Formoterol HFA (1) 23 Tiotropium + Formoterol + Ciclesonid. HFA (1)		Formoterol + Ciclesonide (2) 22 Fluticasone (3) 23 Fluticasone + Formoterol (3)	
Total CFC-based products (total strengths)	**10 (16)**	**23 (40)**	**2 (3)**	**23 (42)**	**8 (16)**
Non-Article-5 Exports (2007)	0%	5.6%	0%	0%	0%

* Six working days/week

3. STRATEGY FOR TRANSITION TO NON-CFC MDIS

3.1 INTRODUCTION

3.1.1 Objectives

The main objectives of India's strategy for transition to non-CFC MDIs are:

- To gradually reduce CFC consumption in the manufacture of pharmaceutical MDIs and achieve their complete elimination by 2012.

- To gradually assimilate non-CFC MDI technology into India, so that the required quantities of these products are cost-effectively and sustainably available

3.1.2 Principles

India's strategy to transition from CFC-based MDIs to non-CFC MDIs will be guided by the following key principles, as enunciated in the Country Programme for phasing out of ODS and the National Health Policy:

- The commitment and willingness of Government of India to eliminate substances that adversely affect the environment and ozone layer

- To prevent industrial dislocation and obsolescence, by supporting the indigenous industry to achieve transition through adequate technical and financial assistance

- Equity in health services and cost-effective and continuous availability of MDIs. Therefore, access to MDIs will be protected during the transition period by a gradual substitution that will involve simultaneous availability of CFC and non-CFC MDIs for a period of time under the control and supervision of the CDSCO.

- The transition strategy will be designed and implemented with the participation of a wide range of stakeholders including experts from the clinical sphere, pharmaceutical industry, and health education specialists, who will contribute to the viability and efficient implementation of this project at all the corresponding levels.

- Strengthening of national stakeholder institutions through adequate technical assistance, capacity-building and training

- To formulate and implement policies and regulations that would support the transition

- The acceptability of the CFC-free products and the reduction of the duration of gradual replacement will be encouraged by conducting clinical tests designed to train healthcare professionals and patients in the use of these new products, complemented by targeted awareness actions thus favoring their acceptability during the transition process.

3.2 STRATEGY COMPONENTS

Government of India recognizes that the strategy for transition to non-CFC MDIs in India is a critical step in ensuring compliance with its Montreal Protocol obligations and is therefore committed to take expedited actions to phase-out CFCs in MDI manufacturing in India. Government of India also recognizes the need to align such strategy with the preparedness of its healthcare sector to accept CFC-free alternatives and also the need to ensure adequate and cost-effective availability of MDIs to patients. Based on this the proposed strategy will need to include the following components:

- Technology conversions at MDI manufacturers
- Technical assistance
- Policy and regulatory actions
- Targeted awareness and capacity-building actions among stakeholders
- Efficient management of the transition and implementation of appropriate monitoring and verification protocols

3.2.1 Technology Conversions

This component would cover technology conversions at the five MDI manufacturers in India.

Selection of Technology

In considering options for developing appropriate alternatives to CFC-based MDIs in India, two factors need to be taken into account:

- Ease of use by the patient and applicability to the local context
- Ease of technology conversion
- The requirement to ensure that suitable therapies for all patient groups such as pediatric patients, adolescents and senior patients
- Maturity, effectiveness and commercial availability of the technology

Two main technology options, which qualify based on the above considerations, have been developed as alternatives to CFC-based MDIs. These are:

- HFA technology: This retains the drug delivery mechanism
- Dry Powder Inhalers (DPI): This involves a different delivery mechanism as well as administration of the drug in a different physical form (a powder as compared to an aerosol suspension)

In order to determine which of the above two options is more suited to the Indian context, the relative merits of the two technology options are evaluated.

DPIs

Two of the five MDI manufacturers in India (Cadila and CIPLA), have the facilities to produce single-dose DPIs covering ten drugs. The rationale for developing single-dose DPIs locally was to cover the needs of a specific group of elderly patients who have difficulties in coordination and dexterity to apply MDI products, but not with the intention to replace CFC MDIs as therapeutic treatment for asthma and COPD for all patients. These DPIs did not find acceptability among doctors and patients.
Various problems as reported by the Indian Chest Society and National College of Chest Physicians include:

- Throat irritation and coughing due to higher particle size than in MDIs.

- The tropical climatic conditions in India make it difficult to use the product effectively. At humidity levels of 70% to 80% the capsule absorbs moisture and this prevents the effective separation of the capsule by the device and the delivery of the drug.
- Difficulties in application of the drug include patients swallowing the capsule instead of introducing it in the device. Some of the side effects associated with swallowing the capsule are fatigue, headache, hypertension and growth retardation in children.

It has been very well-documented at the global level that DPIs do not represent a satisfactory therapeutic alternative to pressurized MDIs for all patients or for all drugs. DPI formulations either contain the active drug alone or have a carrier powder (e.g. lactose) mixed with the drug. The drug particles must be of sufficiently small diameter to for deposition on the airways. Young children (typically below 5 years old), patients with severe asthma and elderly COPD patients may not always be able to achieve adequate breathing flow to ensure optimal medication delivery from DPIs. A DPI-only based strategy would leave a significant portion of the patient population at high risk.

HFA-based MDIs

The HFA versions of CFC-based MDIs present an identical delivery mechanism. Therefore no adaptation is required on the part of the patient to use the drug. However, some challenges still exist:

- HFA-based MDIs require acceptance of slightly different physical characteristics with regard to taste.
- The technology of formulation of HFA-based MDIs differs significantly from that of CFC-based MDIs.

Selection of DPIs as an alternative technology will also necessitate providing for costs of access to suitable DPI technology and investments in new manufacturing and packaging infrastructures. Considering the development costs and costs of molds and tooling, the costs per therapeutic dose of DPIs will be significantly higher than those with HFA-based MDIs. Thus, DPI technology is not favorable as a cost-effective alternative.

In consultation with relevant stakeholders and considering the relative merits of the two technology options, it has been decided that HFA technology would be best suited for Indian conditions, considering ease of use for patients, availability of technology and technology providers and wider applicability in a humid climate.

Access to technology

Intellectual property issues are not foreseen, as India does not have to comply with WIPO requirements until 2016, which is beyond the timeframe of this project. Also by that time the patents for the drug molecules involved in this project will have expired. Furthermore, each of the five enterprises currently manufacturing CFC-based MDIs has in-house product development capability that has a record of developing products for the Indian market.

Product Development

Some of the existing CFC-based MDI drugs will need to be reformulated for HFA technology. Others (e.g. Salbutamol plus Ipratropium bromide), which do not have HFA alternative formulations approved will need to be developed. The reformulation and development is expected to be carried out by the enterprises themselves and would be subject to statutory approval. The entire process is expected to take between 9 and 15 months.

Conversions

All five MDI manufacturers utilize CFC pressure filling. They use both CFC-11 and CFC-12 in the manufacture of MDIs. CFC-11 is used for preparation of a "suspension slurry" of the active ingredient to facilitate filling the precise quantity into the open MDI container, after which the MDI container is closed with an aerosol metering valve, and thereafter CFC-12 that acts as the aerosol "propellant" is injected into the aerosol container under pressure through the metering valve. Replacement equipment to allow HFA-based MDI production can be installed alongside existing equipment.

The conversions would involve introduction of the necessary equipment for production lines, suitable for manufacturing the HFA-based MDIs.

More details of enterprise-level technology conversions are provided in Annex-1 and Annex-7.

3.2.2 Technical Assistance

In order to properly coordinate the technical implementation of the strategy, services of external technical expert(s) will be utilized. The tasks would include technical monitoring and supervision of enterprise-level conversions, technical advice on procurement, trouble-shooting issues between enterprises and suppliers, etc. More details are provided in Annex-2.

3.2.3 Policies and Regulations

In order to effectively support the transition to non-CFC MDIs, Government of India proposes to consider the following policy and regulatory interventions:

Control of supply of CFC-based MDIs

- Regulating CFC-based MDI manufacturing beyond 2009
- Regulating new formulations or products with CFC-based MDIs.
- Regulating import of new CFC-based MDIs. The timing of this measure needs to be aligned with the timing of phase-out of CFCs in MDI manufacturing by Ministry of Health and Family Welfare.

Promotion of CFC-free alternatives

- Fiscal incentives for adopting non-CFC alternatives
- Fast track procedures for approval of non-CFC MDIs

More details on this component are provided in Annex-3.

3.2.4 Awareness and Capacity Building Actions

Awareness and capacity-building actions are considered important and complementary to other initiatives to facilitate quicker adoption of HFA-based MDIs. Two critical factors would influence quicker market adoption of HFC-based MDIs:

- Prescription of HFC-based MDIs by doctors
- Wide availability of HFC-based MDIs in pharmacies

The following activities are proposed:

- Stakeholder sensitization workshops at national, regional and local levels
- Development of awareness materials for healthcare professionals, pharmacies, medical facilities treating respiratory diseases and organizations involved in disseminating knowledge on these diseases and treatments
- Public awareness through media publicity
- Color coding/labeling of CFC-based and HFA-based MDIs
- Information dissemination through dedicated website

More information on this component is provided in Annex-4.

3.2.5 Monitoring and Management

Following key activities would be carried out under this component:

a) Coordination of the strategy implementation with the various policy and awareness actions
b) Verification and certification of CFC phase-out
c) Status/progress reporting
d) Monitoring and evaluation of outputs

More details are provided in Annex-5.

Availability and management of Pharma-grade CFCs during the transition period

The consumption of CFCs in MDI manufacturing shows a decline from 2006 to 2007. However, as mentioned in Section 1.2 it still constitutes a significant portion of the agreed allowable total consumption and potentially in excess of the agreed consumption limits in 2008 and 2009. This situation poses a significant risk of non-compliance post-2007 and calls for urgent interventions to ensure timely and smooth transition to non-CFC MDIs and also effective management of CFCs during the transition period.

ExCom Decision 54/35 stipulates a limit on availability of CFCs for consumption in India, i.e., a maximum of 825 ODP tonnes would be available for consumption during 2008 and 2009.

Given these CFC consumption limits, while it is critical to accelerate phase-out of CFCs in pharmaceutical MDIs, it is also critical to ensure availability of adequate pharmaceutical-grade CFCs during the transition period.

In this regard, the following actions are proposed:

- Establishing the requirements of pharmaceutical-grade CFCs needed during the transition period, to ensure reliable availability of proven drugs to patients. This task will be a collaborative effort between the enterprises and government as part of the transition strategy. According to the information collected during the project preparation the quantity required between 2009 and 2012 may be above the 825 ODP tonnes available as per Decision 54/35, but it will need to be accurately defined. For the required quantities above the 825 ODP tonnes available, appropriate steps will need to be defined.

- India may need to apply for Essential Use Nomination for the amount of pharmaceutical-grade CFCs needed, which cannot be covered by the current limitations of availability. The exact amounts required would be calculated as part of the process described above.

3.3 MONITORING MILESTONES

	2008				2009				2010				2011				2012			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Annual CFC phase-out in MDIs (600 tonnes)	**50**				**100**				**150**				**150**				**150**			
Submission of proposal to MLF																				
Approval by MLF																				
Project document signature by Government																				
Implementation appraisal																				
Equipment specifications and approval																				
Equipment procurement and delivery																				
Formulation development																				
Stability testing and laboratory analysis																				
Product registration																				
Policy and regulatory actions																				
Awareness actions																				
Technical assistance																				
Equipment installation and commissioning																				
Trial production																				
Commercial production of non-CFC MDIs																				

3.4 IMPLEMENTATION

The overall management and coordination of the plan will be the responsibility of Ozone Cell, Ministry of Environment and Forests, with the assistance of UNDP as the lead implementing agency, UNEP as the cooperating implementing agency and Government of Italy as the bilateral cooperating agency.

3.5 FINANCING

The total cost of the plan is **US$ 61,701,934**. The requested MLF grant is **US$ 26,759,319**. The balance cost amounting to **US$ 34,942,615** will be co-financed by beneficiary enterprises.

3.6 RESULTS

The plan will result in a sustainable transition from CFC-based to HFA-based MDIs and in a phase-out of CFCs in the manufacture of MDIs in India by 2012.

ANNEX-1

PROJECT COMPONENT-I: TECHNOLOGY CONVERSIONS

ENTERPRISE LEVEL SUMMARIES

ATTACHMENT-1

SUMMARY: CADILA HEALTHCARE LTD.

1. BASIC DATA AT A GLANCE

Local Ownership: 100%
Exports to Non-Article 5 Countries: 0.00
Establishment of Production Line: 2002
Co-financing Commitment: 30%

2. CFC CONSUMPTION

Parameter	CFC-based MDI Manufacturing
	Baseline Year: 2003
CFC Consumed (in ODP Tonnes)	2.94

3. PROJECT COST SUMMARY

The table below shows the summary of the elements of the project and the proposed co-financing, at Cadila Healthcare Ltd (all amounts in US dollars)

Cost Head	Eligible Costs	Proposed Co-Financing	Proposed Project Funding
Incremental Development Costs	840,345	30%	588,242
Incremental Capital Costs	1,218,000	30%	852,600
Incremental Operating Costs	124,842	30%	87,389
TOTAL	**2,183,187**	**30%**	**1,528,231**

4. PROJECT COSTS

4.1 Product Development Costs

In reviewing the extensive listing of Cadila's products, not all of those listed are eligible for consideration. The following will not be eligible or appropriate for consideration.

a) Products which Cadila have decided they do not intend to make available as an HFA MDI and will be discontinued with the phase out of CFC

b) Products launched significantly after the 2003 baseline year. Having reviewed data, some products were under development and in the latter stages of registration in 2003, although are not recorded as formally launched until 2004. These products do represent eligible formulations/ products as significant volumes were manufactured prior to the baseline.

Further, consideration has been given to how products in multiple strengths are typically developed. Where three or four strengths of a product are commercialized, it is typical to develop only the highest and lowest strength in detail and to only undertake minimal confirmatory activities on the intermediate strengths.

Applying these criteria, only 10 formulations out of the 16 existing formulations are included in the calculation of development costs: Salbutamol. Budesonide 100, Budesonide 200, Formoterol Fumarate, Ipatropium Bromide, Budesonide+Formoterol 100, Budesonide+Formoterol 400, Salbutamol + Ipatropium, Formoterol + Fluticasone 125, Formoterol + Fluticasone 250.

Total Cadila Incremental Development Cost is estimated as US 840,345.

4.2 Incremental Capital Costs

Detailed description of the baseline equipment and proposed equipment for conversion can be found in Annex 7. The summary is tabulated below (all amounts in US dollars):

Item	Cost
1 Single Macromat filling line and associated pressure filling and preparation vessel	1,198.000
Modifications to existing area	20,000
Total	**1,218,000**

4.3 Incremental Operating costs

Incremental operating costs are calculated based on 2007 production of CFC-based MDIs. The production in 2007 was 713,387 units. No allowance for future growth in production has been factored. Incremental operating costs are calculated for one year duration.

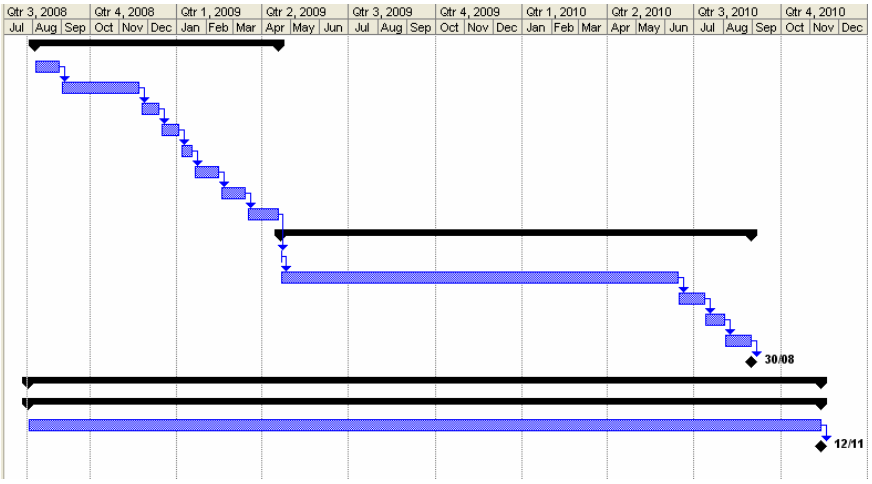
Cadila could not provide a detailed analysis for differences in costs between equivalent CFC and HFA-based MDIs, as they only have CFC-based MDI manufacturing experience. In reviewing the cost quotations provided to Cadila, it is evident that costs and overheads are similar to other enterprises within the sector. It is reasonable therefore to assume that resulting cost differences will also be similar.

Therefore, based on a weighted average calculation, the incremental cost difference between an equivalent CFC and HFA MDI is approximately Indian Rupees 7.37. This is equivalent to US$ 0.175/unit of CFC-based MDI.

Based on the above, the incremental operating costs at Cadila are **US$ 124,842**

5. PROJECT SCHEDULE

	Task Name	Duration
1	**Project Administration**	**185 days**
2	Submission of the project to MLF	4 wks
3	Approval by MLF	3 mons
4	Project document submitted to beneficiarie	3 wks
5	Project document signature	0.75 mons
6	Implementation Appraisal	0.5 mons
7	Selection of team	1 mon
8	Detailed program plaaning	1 mon
9	Generation of equipment TOR's	25 days
10	**Equipment sub Project (Small)**	##########
11	Place order for equipment	1 day?
12	delivery of equipment	15 mons
13	Installation of equipment	4 wks
14	I/Q and O/Q	3 wks
15	PQ	4 wks
16	Equipment available	0 days
17	**Formulation Development sub project**	**600 days**
18	**Pilot equipment exists**	**600 days**
19	Products developed and launced	30 mons
20	Transition Complete	0 days



Based on the above, the lead time for conversion at Cadila Healthcare Ltd will be about 24 to 26 months from the date of approval of the project. It will be essential to ensure that appropriate quantities of CFCs are made available, in line with the managed requirements during transition.

ATTACHMENT-2

SUMMARY: CIPLA LTD.

1. BASIC DATA AT A GLANCE

Local Ownership: 100%
Exports to Non-Article 5 Countries: 5.60% (2007)
Establishment of Production Line: 1995 (2), 2002 (2), 2003 (3)
Co-financing Commitment: Minimum 30% (presently calculated 59.90%)

2. CFC CONSUMPTION

Parameter	CFC-based MDI Manufacturing Baseline Year: 2003
CFC Consumed (in ODP Tonnes)	526.60

3. PROJECT COST SUMMARY

The table below shows the summary of the elements of the project and the proposed co-financing, at CIPLA Ltd (all amounts in US dollars)

Cost Head	Eligible Costs	Proposed Co-Financing	Proposed Project Funding
Incremental Development Costs	37,890,000	70%	11,367,000
Incremental Capital Costs	11,175,600	35.5%	7,208,262
Incremental Operating Costs	4,411,716	35.5%	2,845,557
TOTAL	**53,477,316**	**59.9%**	**21,420,819**

4. PROJECT COSTS

4.1 Product Development Costs

CIPLA have already developed many of their CFC-based MDI products and relaunched them in HFA format. In addition some of the newer MDIs which have been developed by CIPLA have only been launched in an HFA presentation.

In reviewing the extensive listing of CIPLA's products not all of those listed are eligible for consideration. The following will not be eligible or appropriate for consideration.

a) Isoprenaline Sulphate is an older product being phased out in many countries as it is linked to abuse related issues.

b) Beclomethasone Nasal spray is a nasal delivery system which is adequately replaced with an aqueous spray system which CIPLA already manufactures.

c) Products launched significantly after the 2003/2004: Having reviewed data some products were developed and in the latter stages of registration in 2003, although are not recorded as formally launched until 2004.

Further, consideration has been given to how products in multiple strengths are typically developed. Where three or four strengths of a product are commercialized, it is typical to develop only the highest and lowest strength in detail and to only undertake minimal confirmatory activities on the intermediate strengths.

Applying the criteria above, the following products will be developed:

- Salbutamol (1 strength)
- Salbutamol + Beclomethasone (1 strength)
- Sodium Cromoglycate (1 strength)
- Beclomethasone (3 strengths)
- Budesonide (2 strengths)
- Ipratropium (2 strengths)
- Fluticasone (2 strengths)
- Salmeterol (1 strength)
- Formoterol (1 strength)
- Ipratropium + Salbutamol (1 strength)
- Salmeterol + Fluticasone (2 strengths)
- Sodium Cromoglycate (1 strength)
- Budesonide + Formoterol (1 strength)
- Troventol (1 strength)
- Tiotropium (1 strength)
- Tiotropium +Formoterol (1 strength)

Of these, CIPLA on their own initiative have already formulated 15 and currently 3 (some of which are the more problematic) still have to be formulated. The formulations above represent a minimum of 22 individual formulations (high and low strength for multiple strength products), which will need to be developed.

As a result of the extensive development activities already undertaken by CIPLA, they have developed a very good understanding of the costs associated with the development of an HFA MDI. The development cost estimates take in to consideration the following:

- Some products are far more problematic to reformulate than others

- In order to continue to provide the products internationally, CIPLA's development protocols need to be very demanding, so that the data will be acceptable to all potential reviewing health authorities. CIPLA have a global presence and it is necessary to develop all HFA products in a manner fully compliant with the demands of all regulatory bodies around the world. This avoids the need for unnecessary duplication of the development activities for each territory. The impact of this however is a far more intensive and comprehensive development programme than may be required for solely domestic registration.

Total Cipla Incremental Development Cost is estimated as **US$ 37,890,000.**

4.2 Incremental Capital Costs

Detailed description of the baseline equipment and details of conversion and equipment are provided in Annex-7. The summary is tabulated below (all amounts in US dollars):

Item	Cost
Replacement Line A	4,420,000
1,000 Litre mixing vessel	840,600
Modifications	25,000
Replacement Line B including 500 l vessel	2,080,000
Replacement Line C including 500 l vessel	2,080,000
Bulk storage and distribution modifications	1,730,000
Total	**11,175,600**

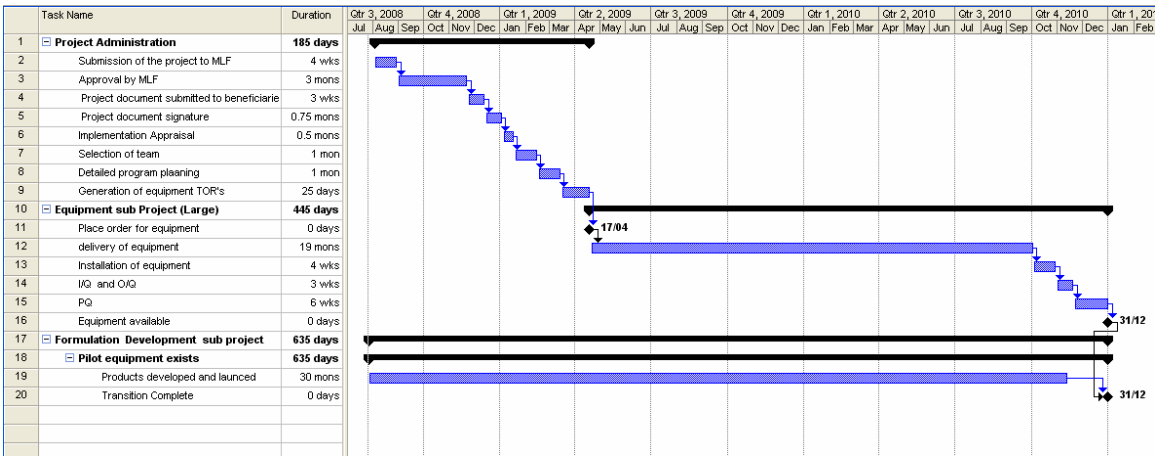
4.3 Incremental Operating costs

Incremental operating costs are calculated based on 2007 production of CFC-based MDIs. The production in 2007 was 27.35 million units. No allowance for future growth in production has been factored. Incremental operating costs are calculated for one year duration.

The incremental operational cost analysis shows that at US$ 0.1613 per unit, the incremental operating costs for one year duration for a production volume of 27.35 million units are calculated at **US$ 4,411,716.**

5. PROJECT SCHEDULE

CIPLA have some equipment suitable for commencing development of HFA MDI formulations, however complete transition to HFA MDIs and hence the elimination of use of CFCs, is dependant on the successful installation of new equipment required as described (in Annex-7) in this proposal. The schedule below takes into account the current equipment procurement lead time in to consideration.



Based on the above, the lead time for conversion at CIPLA Ltd will be about 25 to 27 months from the date of approval of the project. It will be essential to ensure that appropriate quantities of CFCs are made available, in line with the managed requirements during transition.

ATTACHMENT-3

SUMMARY: GLAXOSMITHKLINE PHARMACEUTICALS LTD.

1. BASIC DATA AT A GLANCE

Local Ownership: 49.33%
Exports to Non-Article 5 Countries: 0%
Establishment of Production Line: 1989
Co-financing Commitment: Minimum 30% (presently calculated 81%)

2. CFC CONSUMPTION

Parameter	CFC-based MDI Manufacturing
	Baseline Year: 2003
CFC Consumed (in ODP Tonnes)	24.60

3. PROJECT COST SUMMARY

The table below shows the summary of the elements of the project and the proposed co-financing, at GlaxoSmithKline Pharmaceuticals Ltd (all amounts in US dollars)

Cost Head	Eligible Costs	Proposed Co-Financing	Proposed Project Funding
Incremental Development Costs	0	100%	0
Incremental Capital Costs	1,178,600	81%	223,934
Incremental Operating Costs	330,680	81%	62,829
TOTAL	**1,509,280**	**81%**	**286,763**

4. PROJECT COSTS

4.1 Product Development Costs

GSK have developed and launched many HFA products internationally. Development of the products required for GSK is completed and would be transferred internally. Therefore this cost will be absorbed within the GSK structure.

The products below were all marketed significantly before 2003.

- Ventorlin Inhaler (Salbutamol)
- Becoride Inhaler (BDP)
- Becoride Forte Inhaler (BDP)

4.2 Incremental Capital Costs

Detailed description of the baseline equipment and proposed equipment for conversion can be found in Annex 7. The summary is tabulated below (all amounts in US dollars):

Item	Cost
1 Single Macromat filling line and associated pressure filling and preparation vessel	1,148,600
Modifications to existing area	30,000
Total	**1,178,600**

4.3 Incremental Operating costs

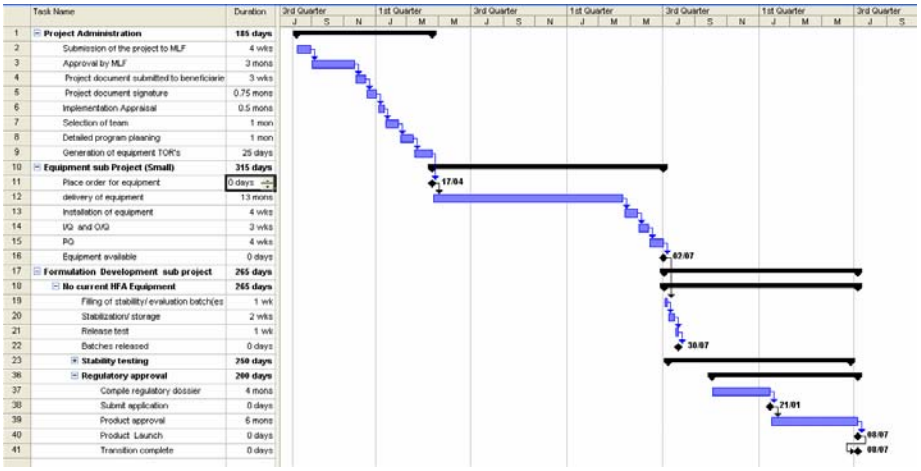
Incremental operating costs are calculated based on 2007 production of CFC-based MDIs. The production in 2007 was 944,801 million units (Ventorlin). No allowance for future growth in production has been factored. Incremental operating costs are calculated for one year duration.

GSK in India will potentially begin manufacture of HFA products as marketed by the international parent company. These are suspension formulations containing no surfactant. As a result they employ packaging components (metering valves and fluoropolymer-coated cans). These are considerably more expensive than the components currently used for the CFC MDI. Based on current costing the additional cost will be about US$ 0.35/unit CFC MDI.

Thus, at US$ 0.35 per unit, the incremental operating costs for one year duration for a production volume of 944,801 units are calculated at **US$ 330,680.**

5. PROJECT SCHEDULE

GSK currently have no equipment suitable to commence development of HFA MDI formulations, therefore complete transition to HFA MDIs and hence the elimination of use of CFCs is dependent on the successful installation and qualification of the equipment referenced in Annex-7 in this proposal. The schedule below takes into account the current equipment procurement lead time in to consideration:



Based on he above, the lead time for conversion at GSK will be about 30 to 32 months from the date of approval of the project. It will be essential to ensure that appropriate quantities of CFCs are made available, in line with the managed requirements during transition.

ATTACHMENT-4

SUMMARY: MIDAS-CARE PHARMACEUTICALS P. LTD.

1. BASIC DATA AT A GLANCE

Local Ownership: 100%
Exports to Non-Article 5 Countries: 0.00
Establishment of Production Line: 1993-1994
Co-financing Commitment: 30%

2. CFC CONSUMPTION

Parameter	CFC-based MDI Manufacturing
	Baseline Year: 2003
CFC Consumed (in ODP Tonnes)	18.78

3. PROJECT COST SUMMARY

The table below shows the summary of the elements of the project and the proposed co-financing, at Midas-Care Pharmaceuticals P. Ltd (all amounts in US dollars)

Cost Head	Eligible Costs	Proposed Co-Financing	Proposed Project Funding
Incremental Development Costs	765,000	30%	535,500
Incremental Capital Costs	780,000	30%	546,000
Incremental Operating Costs	308,850	30%	216,195
TOTAL	**1,853,850**	**30%**	**1,297,695**

4. PROJECT COSTS

4.1 Product Development Costs

In reviewing the extensive listing of products of Midas-Care Pharmaceuticals P. Ltd, not all of those listed are eligible for consideration. The following will not be eligible or appropriate for consideration.

a) Products which Midas-Care have decided they do not intend to make available as an HFA MDI and will be discontinued with the phase out of CFC

b) Products launched significantly after the 2003 baseline year. Having reviewed data, some products were under development and in the latter stages of registration in 2003, although are not recorded as formally launched until 2004. These products do represent eligible formulations/ products as significant volumes were manufactured prior to the baseline.

Further, consideration has been given to how products in multiple strengths are typically developed. Where three or four strengths of a product are commercialized, it is typical to develop only the highest and lowest strength in detail and to only undertake minimal confirmatory activities on the intermediate strengths.

Applying the criteria above, out of the 42 formulations produced by Midas-Care, only 17 formulations are included in the calculation of costs:

a) Salbutamol (1 strength)
b) Ipratropium Bromide (1 strength)
c) Salbutamol +Beclomethasone Dipropionate (1 strength)
d) Formeterol Fumarate (1 strength)
e) Budesonide + Formoterol Fumurate (2 strengths)
f) Beclomethasone Dipropionate (2 strengths)
g) Budesonide (2 strengths)
h) Fluticasone Propionate + Salmeterol (2 strengths)
i) Salbutamol + Ipratropium Bromide (1 strength)
j) Sodium Cromoglycate (1 strength)
k) Tiotropium Bromide (1 strength)
l) Fluticasone Propionate (2 strengths)

Total Midas Care Incremental Development Cost is estimated as **US$ 765,000**

4.2 Incremental Capital Costs

The costs below only cover one CFC MDI line. Detailed description of the baseline equipment and proposed equipment for conversion can be found in Annex 7. The summary is tabulated below (all amounts in US dollars):

Item	Cost
1.5 line manual filling installation	380,000
Pressure filling and preparation vessel	360,000
Custom fabricated table	20,000
Modifications to existing area	20,000
Total	**1,218,000**

4.3 Incremental Operating costs

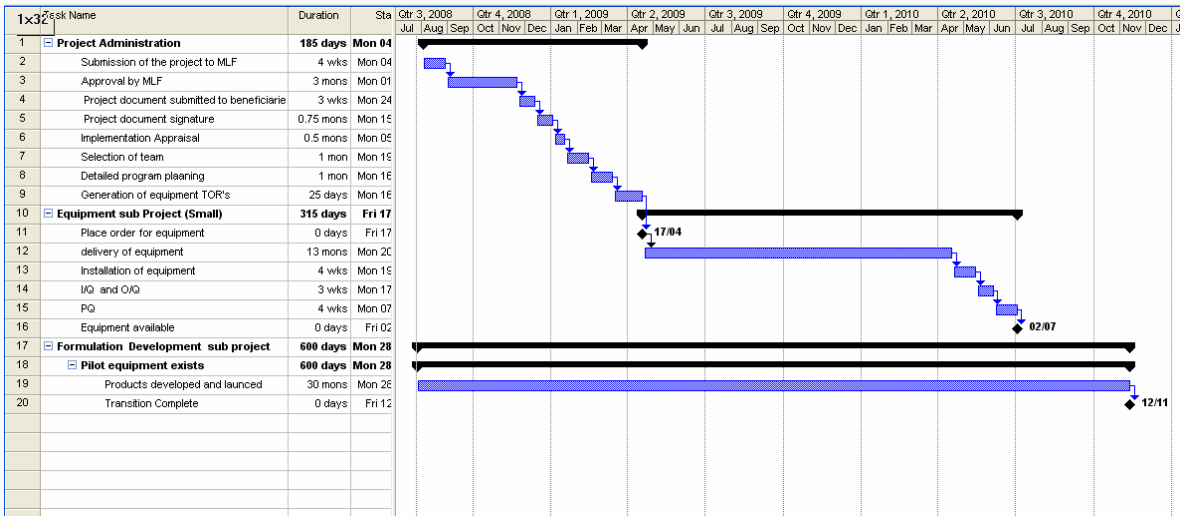
Incremental operating costs are calculated based on 2007 production of CFC-based MDIs. The production in 2007 was 713,387 units. No allowance for future growth in production has been factored. Incremental operating costs are calculated for one year duration.

Midas-Care provided a detailed cost analysis of the anticipated differences between equivalent CFC and HFA MDIs. The detailed analysis can be found in Annex-7. The result of this analysis the incremental cost difference between an equivalent CFC and HFA MDI is approximately Indian Rupees 7.37. This is equivalent to US$ 0.175/unit of CFC-based MDI.

Based on the above, the incremental operating costs at Midas-Care for 1,764,857 units work out to **US$ 308,850.**

5. PROJECT SCHEDULE

Midas-Care have some equipment suitable for commencing development of HFA MDI formulations, however complete transition to HFA MDIs and hence the elimination of use of CFCs, is dependant on the successful installation of new equipment required as described (in Annex-7) in this proposal. The schedule below takes into account the current equipment procurement lead time in to consideration:



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Based on the above, the lead time for conversion at Midas-Care will be about 22 to 25 months from the date of approval of the project. It will be essential to ensure that appropriate quantities of CFCs are made available, in line with the managed requirements during transition.

ATTACHMENT-5

SUMMARY: SUN PHARMACEUTICAL INDUSTRIES LTD.

1. BASIC DATA AT A GLANCE

Local Ownership: 100%
Exports to Non-Article 5 Countries: 0.00
Establishment of Production Line: 1999-2000
Co-financing Commitment: 30%

2. CFC CONSUMPTION

Parameter	CFC-based MDI Manufacturing
	Baseline Year: 2003
CFC Consumed (in ODP Tonnes)	5.99

3. PROJECT COST SUMMARY

The table below shows the summary of the elements of the project and the proposed co-financing, at Sun Pharmaceutical Industries Ltd. (all amounts in US dollars)

Cost Head	Eligible Costs	Proposed Co-Financing	Proposed Project Funding
Incremental Development Costs	660,490	30%	462,343
Incremental Capital Costs	780,000	30%	546,000
Incremental Operating Costs	67,811	30%	47,468
TOTAL	**1,508,301**	**30%**	**1,055,811**

4. PROJECT COSTS

4.1 Product Development Costs

In reviewing the extensive listing of Sun Pharma's products, not all of those listed are eligible for consideration. The following will not be eligible or appropriate for consideration.

a) Products which Sun Pharma have decided they do not intend to make available as an HFA MDI and will be discontinued with the phase out of CFCs

b) Products launched significantly after the 2003 baseline year. Having reviewed data, some products were under development and in the latter stages of registration in 2003, although are not recorded as formally launched until 2004. These products do represent eligible formulations/ products as significant volumes were manufactured prior to the baseline.

Further, consideration has been given to how products in multiple strengths are typically developed. Where three or four strengths of a product are commercialized, it is typical to develop only the highest and lowest strength in detail and to only undertake minimal confirmatory activities on the intermediate strengths. Applying these criteria, only 10 formulations are included in the calculation of development costs, shown in the table below:

- Salbutamol (1 strength)
- Fluticasone (2 strengths)
- Salmeterol and Fluticasone Propionate (2 strengths)
- Budenoside (2 strengths)
- Formoterol and Budenoside (2 strengths)
- Triptropium (1 strength)

Total Sun Pharma incremental development cost is estimated as **US$ 660,490**

4.2 Incremental Capital Costs

Detailed description of the baseline equipment and proposed equipment for conversion can be found in Annex 7. The summary is tabulated below (all amounts in US dollars):

Item	Cost
1.5 line manual filling installation	380,000
Pressure filling and preparation vessel	360,000
Custom fabricated Table	20,000
Modifications to existing area	20,000
TOTAL	**780,000**

4.3 Incremental Operating costs

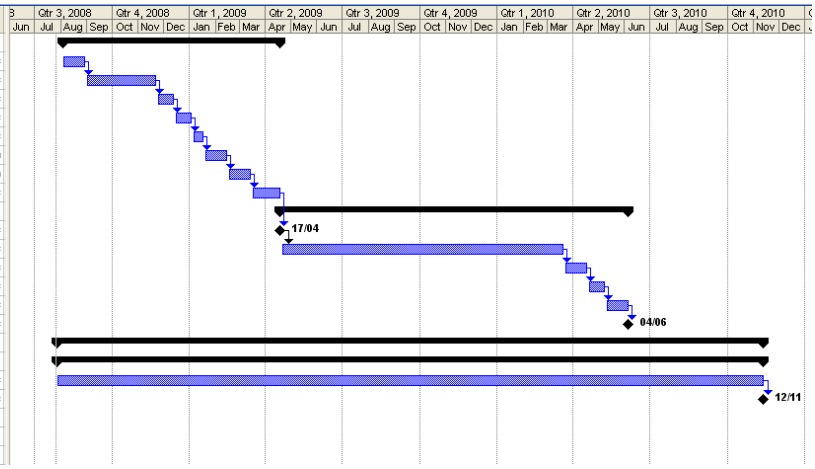
Incremental operating costs are calculated based on 2007 production of CFC-based MDIs. The production in 2007 was 387,492 units. No allowance for future growth in production has been factored. Incremental operating costs are calculated for one year duration.

Sun Pharma could not provide a detailed analysis for differences in costs between equivalent CFC and HFA-based MDIs, as they have only limited exposure HFA-based MDIs. In reviewing the cost quotations provided to Sun Pharma, it is evident that costs and overheads are similar to other enterprises within the sector. It is reasonable therefore to assume that resulting cost differences will also be similar. Therefore, based on a weighted average calculation, the incremental cost difference between an equivalent CFC and HFA MDI is approximately Indian Rupees 7.37. This is equivalent to US$ 0.175/unit of CFC-based MDI. Based on the above, the incremental operating costs at Sun Pharma are **US$ 67,811.**

5. PROJECT SCHEDULE

Sun Pharma currently has no equipment suitable to commence development of HFA MDI formulations, therefore complete transition to HFA MDIs and hence the elimination of use of CFCs is dependent on the successful installation and qualification of the equipment referenced in Annex-7 in this proposal. The schedule below takes into account the current equipment procurement lead time in to consideration:

	Task Name	Duration
1	**Project Administration**	**185 days**
2	Submission of the project to MLF	4 wks
3	Approval by MLF	3 mons
4	Project document submitted to beneficiarie	3 wks
5	Project document signature	0.75 mons
6	Implementation Appraisal	0.5 mons
7	Selection of team	1 mon
8	Detailed program planing	1 mon
9	Generation of equipment TOR's	25 days
10	**Equipment sub Project (Small)**	**295 days**
11	Place order for equipment	0 days
12	delivery of equipment	12 mons
13	Installation of equipment	4 wks
14	I/Q and O/Q	3 wks
15	PQ	4 wks
16	Equipment available	0 days
17	**Formulation Development sub project**	**600 days**
18	**Pilot equipment exists**	**600 days**
19	Products developed and launced	30 mons
20	Transition Complete	0 days



Based on the above, the lead time for conversion at Sun Pharma will be about 24 to 26 months from the date of approval of the project. It will be essential to ensure that appropriate quantities of CFCs are made available, in line with the managed requirements during transition.

ANNEX-2

PROJECT COMPONENT –II: TECHNICAL ASSISTANCE

ANNEX-2

PROJECT COMPONENT-II: TECHNICAL ASSISTANCE

Title:	Technical assistance for implementation of the national strategy for transition to non-CFC MDIs
Implementing Agency:	UNDP
National Coordinating Agency:	Ozone Cell, Ministry of Environment and Forests
Requested Funding:	US$ 350,000
Implementation Timeframe:	January 2009 to December 2012
Impact:	Smooth transition to non-CFC MDIs

Proposed Activities

Technical assistance is proposed to be provided through international experts and, when available, national experts to ensure a smooth transition to the new replacement technology. The experts would need to be process specialists and their functions will include overall technical supervision of conversion projects and technical coordination between equipment/chemical suppliers, beneficiary enterprises and the implementing agency. Their specific responsibilities include:

- Technical assistance for preparing specifications of equipment to be procured in the sub-project
- Technical equipment bid evaluation from suppliers during the competitive bidding process
- Technical guidance to the beneficiary enterprises during start-up with the new equipment and process
- Resolving technical issues with the phase-in of the new equipment and processes
- Technical evaluation of the results of production and product quality trials jointly with the recipient enterprise
- Technical project commissioning including final technical inspection of equipment and process for establishing completion and compliance with project objectives such as the destruction of the baseline CFC-based equipment where applicable, verification of depletion of CFC stocks, and verifying that the non-CFC production process is in operation
- Technical evaluation of enterprise reimbursement claims on equipment, raw materials, local works and other items and certification of the same
- Technical clearance of project completion, so that the project assets can be handed over and the project closed.
- Technical assistance for completion and other reporting requirements.

Budget

Input	Cost (US$)
International Expert(s) Avg. 15 workdays/enterprise X 5 enterprises/year = 300 workdays over 4 years Total 300 workdays @ US$ 600/workday	180,000
National Expert(s) Avg. 15 workdays/enterprise X 5 enterprises = 300 workdays over 4 years Total 300 workdays @ US$ 200/workday	60,000
Expenses (travel, office and miscellaneous reimbursed expenses) over 4 years	110,000
Total:	**350,000**

ANNEX-3

PROJECT COMPONENT –III: SUPPORT FOR POLICY AND REGULATIONS

ANNEX-3

PROJECT COMPONENT-III: SUPPORT FOR POLICY & REGULATIONS

Title:	Support for policy and regulations
Implementing Agency:	UNDP
National Coordinating Agency:	Ozone Cell, Ministry of Environment and Forests
Requested Funding:	US$ 70,000
Implementation Timeframe:	July 2009 to December 2011
Impact:	Revisions to existing regulations for supporting the strategy for sustainable transition to non-CFC MDIs are notified

Proposed Activities

In order to effectively support the transition to non-CFC MDIs, Government of India proposes to consider the following policy and regulatory interventions:

Control of supply of CFC-based MDIs

- Partial licensing of CFC-based MDI manufacturing beyond 2009
- Ban on licensing of any new formulations or products with CFC-based MDIs.
- Ban on import of new CFC-based MDIs. The timing of this measure needs to be aligned with the timing of phase-out of CFCs in MDI manufacturing.

Promotion of CFC-free alternatives

- Fiscal incentives for adopting non-CFC alternatives
- Fast track procedures for approval of non-CFC MDIs

Appropriate amendments to the Ozone Depleting Substances (Regulation and Control) Rules 2000 may also need to be carried out, to align them with the requirements of the national strategy for transition to non-CFC MDIs.

The key stakeholders would be the Ozone Cell, Ministry of Environment & Forests, regulatory authorities from the Ministry of Health & Family Welfare, Ministry of Law, healthcare association and pharmaceutical industry.

The process/steps of implementing these measures would be as below:

- Desk review of existing regulations
- Interaction with stakeholders
- Draft regulations
- Review and consultation meetings of stakeholders
- Finalization and notification

It is expected that the entire process of revising regulations would take approximately 30 months.

Budget

Input	Cost (US$)
Legal advisor (about 120 workdays over 30 months @ US$ 200/workday	24,000
Stakeholder consultation meetings (5 meetings X US$ 5,000 per meeting)	25,000
National seminar on Policy and Regulations (1 seminar X US$ 15,000)	15,000
Documentation, finalization and notification	6,000
Total:	**70,000**

ANNEX-4

PROJECT COMPONENT –IV: SUPPORT FOR AWARENESS AND CAPACITY BUILDING

ANNEX-4

PROJECT COMPONENT-IV: SUPPORT FOR AWARENESS AND CAPACITY-BUILDING

Title:	Support for awareness and capacity building
Implementing Agency:	UNEP
National Coordinating Agency:	Ozone Cell, Ministry of Environment and Forests
Requested Funding:	US$ 350,000
Implementation Timeframe:	July 2009 to July 2012
Impact:	Expedited adoption of non-CFC MDIs for treatment of asthma, COPD and other respiratory ailments

Need Assessment

Awareness and capacity-building actions are considered important and complementary to other initiatives to facilitate quicker adoption of HFA-based MDIs as a reliable treatment for asthma, COPD and other respiratory ailments. Two critical factors would influence quicker market adoption of HFC-based MDIs:

- Prescription of HFC-based MDIs by doctors
- Wide availability of HFC-based MDIs in pharmacies

It is therefore considered necessary to sensitize and engage with stakeholders on the imminent transition to non-CFC MDIs in India, provide adequate information dissemination and training and ensure that non-CFC MDIs are regularly prescribed and widely available.

Stakeholders

Government: Ministry of Environment & Forests, Ministry of Health & Family Welfare and related regulatory authorities such as CDSCO and DCGI and including the Pharmacy Council of India, which regulates Pharmacy education in India.

Research Institutions: Indian Council of Medical Research, one of the oldest medical research bodies in the world, functions as an apex research and advisory body to Government for control and management of diseases.

Educational Institutions: The Vallabhbhai Patel Chest Institute in Delhi is a unique and preeminent medical institution dedicated to study and treatment of chest diseases, funded entirely by the Ministry of health and Family Welfare.

Medical Associations: The Indian Medical Association (IMA) is the only representative voluntary association of medical practitioners of modern medicine and has a membership of about 100,000 doctors with over 1,200 branches spread nationwide

Industry Associations: The Indian Pharmaceutical Association is the premier association of pharmacists in India, engaged in continuing education and training, good practices, and updating knowledge on technology, research and regulations.

The Indian Drug Manufacturers Association (IDMA) is the premier representative association of the pharmaceutical manufacturers in India.

Other Organizations: Such as the Indian Chest Society and National College of Chest Physicians are dedicated to disseminating knowledge and conducting training programs on management of Asthma and COPD.

Proposed Activities

The proposed activities for promoting awareness of the imminent transition to non-CFC MDIs would comprise of the following:

- Information dissemination and awareness through seminars and workshops
- Development and distribution of promotional materials
- Promoting public awareness

The activities would require an active engagement of all stakeholders described above for maximum effectiveness and outreach.

Budget

Input	Cost (US$)
Regional workshops for medical practitioners (5 X US$10,000)	50,000
Regional workshops for pharmacists (5 X 10,000)	50,000
Training and information materials on non-CFC MDIs and transition	50,000
Public awareness materials including advertisements	150,000
Sub-contract for design and development of awareness materials	50,000
Total:	**350,000**

ANNEX-5

PROJECT COMPONENT –V: SUPPORT FOR MANAGEMENT AND MONITORING

ANNEX-5

PROJECT COMPONENT-V: SUPPORT FOR MANAGEMENT AND MONITORING

Title:	Support for management and monitoring
Implementing Agency:	UNDP
National Coordinating Agency:	Ozone Cell, Ministry of Environment and Forests
Requested Funding:	US$ 400,000
Implementation Timeframe:	January 2009 to December 2012
Impact:	Timely project implementation, monitoring and reporting

Need Assessment

The implementation of the national strategy for transition to non-CFC MDIs will need to be closely aligned and coordinated with the various policy, regulatory, awareness and capacity-building actions the Government of India is taking and will need to take in future, in order to ensure that the implementation of the strategy is consistent with the Country Programme principles and with the National Health Policy. Further, in view of the time-bound targets needed to be achieved the implementation of the Plan will need to be closely and efficiently managed and will introduce additional coordinating, reporting and monitoring activities.

Proposed Activities

The implementation of the strategy will be managed by a dedicated management team, comprising of a coordinator to be designated by the Ozone Cell and supported by representatives and experts from the implementing/executing agencies and the necessary support infrastructure. The management component of the strategy will include the following activities, for the duration of the Plan:

- Establishment and operation of the management unit
- Coordination of the implementation of various components of the strategy, with the required Government policy and regulatory actions
- Progress/status reporting including management of databases
- Coordination of enterprise-level implementation and phase-out activities
- Establishment and operation of a decentralized mechanism for monitoring and evaluation of Plan outputs, in association with the relevant regulatory bodies
- Verification and certification of CFC phase-out at the enterprise level

Budget

Input	Cost (US$)
Personnel costs including two support staff (4 years)	200,000
Infrastructure costs	20,000
Operational costs	100,000
Independent verification and reporting (US$ 15,000/year for 4 years)	80,000
Total:	**400,000**

ANNEX-6

LETTERS OF COMMITMENT FROM BENEFICIARY ENTERPRISES

Zydus
dedicated to life

Cadila
Healthcare Limited

Sarkhej-Bavla N. H. No. 8A,
Moraiya. Tal. : Sanand,
Dist. : Ahmedabad 382 210. India.
Phone : +91-2717-250331/32/36/37
Fax : +91-2717-250319
www.zyduscadila.com

LETTER OF COMMITMENT

I, Shirsh G. Belapure – President Manufacturing , on behalf of *Cadila Healthcare Limited, Ahmedabad, India* do hereby declare and affirm as below:

THAT we have read and reviewed the project proposal prepared by UNDP, for conversion of our CFC-based MDI manufacturing facilities to non-CFC-based technology at *Cadila Healthcare Limited Ahmedabad, India*;

THAT we have been briefed on and understood the various rules and criteria of the Multilateral Fund for the Implementation of the Montreal Protocol, governing costs, technology, eligibility, funding and counterpart financing;

THAT we are in agreement with the proposed technology conversions, the estimated costs, the proposed funding levels and implementation schedules;

THAT we undertake to implement the conversion to non-CFC-based MDI products and to phase-out the use of CFCs in manufacturing MDIs in accordance with the transition schedule as proposed and also undertake not to revert to use of CFCs in future in any of our MDI manufacturing facilities;

THAT we understand that the proposal will be submitted to the next meeting of the Executive Committee of the Multilateral Fund for its consideration, that the proposal may be subject to funding negotiations between the Executive Committee and Government of India and the net funding that would be actually provided could be lesser than that indicated in the proposal;

THAT we agree to abide by the rules and regulations that may be promulgated by Government of India in context of this project and in context of MDIs in India;

THAT we would abide by the UNDP and Government of India rules and regulations pertaining to finance/accounting, procurement, project management, monitoring and reporting during the implementation stage of the project.

Place: Ahmedabad
Date: 29/07/2008

For and on behalf of *Cadila Healthcare Limited*

Shirsh G. Belapure – President Manufacturing
Authorized Signatory

Cipla

Cipla Ltd.
C-1 Pooja Apts, 17 Hariyali Estate,
Vikhroli (West), Mumbai 400 083.
Tel. : (91-22) 25786604, 25786605,
25784195, 25783843
Fax : (91-22) 25795025

LETTER OF COMMITMENT

I, **R.M. Nikam, Director Supply Chain**, on behalf of **Cipla Ltd, Mumbai (India)**, do hereby declare and affirm as below:

THAT we have been briefed on and understood the various rules and criteria of the Multilateral Fund for the Implementation of the Montreal Protocol, governing costs, technology, eligibility, funding and counterpart financing;

THAT we are in agreement with the proposed technology conversions, the estimated costs, the proposed funding levels and implementation schedules;

THAT we undertake to implement the conversion to non-CFC-based MDI products and to phase–out the use of CFCs in manufacturing MDIs.

THAT we hereby, commit to phase-out the usage of CFC in MDIs by December, 2012. However, till then, the quantities which have been projected year-wise as contained in our project report will be used.

NOTWITHSTANDING what is stated in above paragraphs, we will do our best to phase-out CFC at the earliest possible.

THAT we understand that the proposal will be submitted to the next meeting of the Executive Committee of the Multilateral Fund for its consideration, that the proposal may be subject to funding negotiations between the Executive Committee and Government of India and the net funding that would be actually provided could be lesser than that indicated in the proposal;

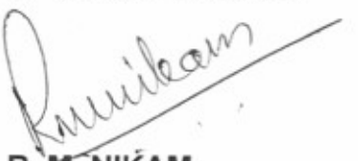
THAT we agree to abide by the rules and regulations that may be promulgated by Government of India in context of this project and in context of MDIs in India;

THAT we would abide by the UNDP and Government of India rules and regulations pertaining to finance/accounting, procurement, project management, monitoring and reporting during the implementation stage of the project.

Place: Mumbai

Date: 12.08.2008

For and on behalf of **CIPLA LIMITED**



R M NIKAM
DIRECTOR – SUPPLY CHAIN

GlaxoSmithKline

GlaxoSmithKline
Pharmaceuticals Limited
A - 10, M.I.D.C.
Ambad-Pathardi Block,
Nashik-422 010. INDIA.

Tel. : 0253-2300346 / 2300404
Fax : 0253 - 2381274

LETTER OF COMMITMENT

I, ***Bhanwar Singh Yadav, Vice President, Nashik factory***, on behalf of ***M/s GlaxoSmithkline Pharmaceuticals Ltd.,*** do hereby declare and affirm as below:

THAT we have read and reviewed the project proposal prepared by UNDP, for conversion of our CFC-based MDI manufacturing facilities to non-CFC-based technology at ***GlaxoSmithkline Pharmaceuticals Ltd. ;***

THAT we have been briefed on and understood the various rules and criteria of the Multilateral Fund for the Implementation of the Montreal Protocol, governing costs, technology, eligibility, funding and counterpart financing;

THAT we are in agreement with the proposed technology conversions, the estimated costs, the proposed funding levels and implementation schedules;

THAT we undertake to implement the conversion to non-CFC-based MDI products wherever applicable and to phase-out the use of CFCs in manufacturing MDIs in accordance with the transition schedule as proposed and also undertake not to revert to use of CFCs in future in any of our MDI manufacturing facilities;

THAT we understand that the proposal will be submitted to the next meeting of the Executive Committee of the Multilateral Fund for its consideration, that the proposal may be subject to funding negotiations between the Executive Committee and Government of India and the net funding that would be actually provided could be lesser than that indicated in the proposal;

THAT we agree to abide by the rules and regulations that may be promulgated by Government of India in context of this project and in context of MDIs in India;

THAT we would abide by the UNDP and Government of India rules and regulations pertaining to finance/accounting, procurement, project management, monitoring and reporting during the implementation stage of the project.

Place: Nashik
Date: 7th August 2008

For and on behalf of GlaxoSmithkline Pharmaceuticals Ltd.

Bhanwar Singh Yadav
Vice President, Nashik factory
Authorized Signatory

Regd. Office
Dr. Annie Besant Road,
Worli, Mumbai - 400 030. INDIA.

भारत सरकार
पर्यावरण एवं वन मंत्रालय
ओज़ोन सेल
Government of India
Ministry of Environment and Forests
Ozone Cell

सत्यमेव जयते

DR. A. DURAISAMY
Director, Ozone Cell

D. O. No. 38/1/2008-OC

Dated : 1st October, 2008

Dear Mr. Chirmulay,

This is to acknowledge receipt of India's proposal for the National Strategy for Transition to non-CFC MDIs and Plan for phase-out of CFCs in pharmaceutical MDIs in India. The document was reviewed by us and subject to our comments as indicated in our message dated 25th September 2008, our concurrence to the contents is confirmed. I hereby request UNDP for its assistance in submission of this proposal to the 56th meeting of the Executive Committee.

With Kind regards,

Yours sincerely,

(A. DURAISAMY)

Mr. Nandan Chirmulay
Regional Coordinator
Montreal Protocol/Chemicals Unit
Environment and Energy Group
UNDP-Thailand
Regional Center in Bangkok, UN Services
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Tel. : +66 2 2882718
Fax : +66 2 2883032
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ज़ोन चार बी, द्वितीय मंजिल, इंडिया हैबिटाट् सैंटर,
लोदी रोड़, नई दिल्ली-110003
Core-4B, 2nd Floor, India Habitat Centre,
Lodhi Road, New Delhi - 110 003

Phone : 24642176, 24602601, 24601533
Fax : 91-11-24642175
e-mail : ozone@del3.vsnl.net.in
web : ozonecell.com

Midas-Care
We Care

MIDAS-Care
PHARMACEUTICALS PVT LTD
Papa Industrial Estate, 40 Suren Road
Andheri (East), Mumbai 400 093
Tel : 2683 5678, 2683 3409
Fax : 91 22 2683 7947
E-mail : aerosol@vsnl.com

LETTER OF COMMITMENT

I, **Ms Sangithaa Gupta**, **Managing Director**, on behalf of **Midas-Care Pharmaceuticals Pvt. Ltd.** do hereby declare and affirm as below:

THAT we have read and reviewed the project proposal prepared by UNDP, for conversion of our CFC-based MDI manufacturing facilities to non-CFC-based technology at **Midas-Care Pharmaceuticals Pvt.Ltd. ;**

THAT we have been briefed on and understood the various rules and criteria of the Multilateral Fund for the Implementation of the Montreal Protocol, governing costs, technology, eligibility, funding and counterpart financing;

THAT we are in agreement with the proposed technology conversions, the estimated costs, the proposed funding levels and implementation schedules;

THAT we undertake to implement the conversion to non-CFC-based MDI products and to phase-out the use of CFCs in manufacturing MDIs in accordance with the transition schedule as proposed and also undertake not to revert to use of CFCs in future in any of our MDI manufacturing facilities;

THAT we understand that the proposal will be submitted to the next meeting of the Executive Committee of the Multilateral Fund for its consideration, that the proposal may be subject to funding negotiations between the Executive Committee and Government of India and the net funding that would be actually provided could be lesser than that indicated in the proposal;

THAT we agree to abide by the rules and regulations that may be promulgated by Government of India in context of this project and in context of MDIs in India;

THAT we would abide by the UNDP and Government of India rules and regulations pertaining to finance/accounting, procurement, project management, monitoring and reporting during the implementation stage of the project.

Place: Mumbai
Date: July 26, 2008

For and on behalf of Midas-Care Pharmaceuticals Pvt Ltd.

Sangithaa

Ms Sangithaa Gupta, Managing Director
Authorized Signatory

MIDAS CARE PHARMACEUTICALS PVT. LTD. MUMBAI

Factory : B - 16, MIDC, Waluj, Aurangabad 431 136 Tel: 91 0240 255 4739 Fax : 91 0240 255 5408 E-mail : midas_care@vsnl.com

17-B, Mahal Industrial Estate,
Mahakali Caves Road, Andheri (E),
Mumbai - 400 093. India.
Tel. : (91-22) 6645 5645
Fax : (91-22) 6645 5685

SUN PHARMACEUTICAL INDUSTRIES LTD.

LETTER OF COMMITMENT

I, Mr. Kirti Ganorkar, Vice President (Business Development) , on behalf of Sun Pharmaceutical Industries Limited do hereby declare and affirm as below:

THAT we have read and reviewed the project proposal prepared by UNDP, for conversion of our CFC-based MDI manufacturing facilities to non-CFC-based technology at Sun Pharmaceutical Industries Limited

THAT we have been briefed on and understood the various rules and criteria of the Multilateral Fund for the Implementation of the Montreal Protocol, governing costs, technology, eligibility, funding and counterpart financing;

THAT we are in agreement with the proposed technology conversions, the estimated costs, the proposed funding levels and implementation schedules;

THAT we undertake to implement the conversion to non-CFC-based MDI products and to phase-out the use of CFCs in manufacturing MDIs in accordance with the transition schedule as proposed and also undertake not to revert to use of CFCs in future in any of our MDI manufacturing facilities;

THAT we understand that the proposal will be submitted to the next meeting of the Executive Committee of the Multilateral Fund for its consideration, that the proposal may be subject to funding negotiations between the Executive Committee and Government of India and the net funding that would be actually provided could be lesser than that indicated in the proposal;

THAT we agree to abide by the rules and regulations that may be promulgated by Government of India in context of this project and in context of MDIs in India;

THAT we would abide by the UNDP and Government of India rules and regulations pertaining to finance/accounting, procurement, project management, monitoring and reporting during the implementation stage of the project.

Place: Mumbai
Date: 29th July, 2008

For and on behalf of Sun Pharmaceutical Industries Ltd.,

Kirti Ganorkar
(Vice President -Business Development)