

Stratégie nationale de mise en œuvre du Canada sur le changement climatique



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Processus
national sur le
changement
climatique

Table des matières

Préface	1
Aperçu	4
A. Stratégie nationale de mise en œuvre du Canada sur le changement climatique – Cadre d’action	5
B. Vision	6
C. Approche de gestion des risques que pose le changement climatique	6
i) Améliorer nos connaissances scientifiques et analytiques	7
ii) Coordonner l’action nationale et internationale	9
iii) Mettre en œuvre une approche par étapes	10
D. Faire face au changement climatique – Atténuation et adaptation	13
E. Marge de manœuvre et coordination des ordres de gouvernement	14
F. Plans d’activités triennaux mis à jour tous les ans	15
G. Examen et mise à jour	16
 Annexes	
1. Science, Impacts, Adaptation	
2. Contexte international	
3. Contexte national	

Préface

La Stratégie nationale de mise en œuvre du Canada sur le changement climatique s'inscrit dans le cadre d'une intervention nationale coordonnée face au problème du changement climatique. Les gouvernements fédéral, provinciaux et territoriaux lanceront cette stratégie d'envergure en prenant des mesures individuelles et conjointes, lesquelles sont décrites dans le Premier plan national d'activités (de 2000-2001 à 2002-2003). Ces gouvernements feront état des résultats dans des rapports d'étape et expliqueront en détail les nouvelles mesures prises dans les mises à jour annuelles des plans d'activités triennaux.

Cette démarche est le fruit du Processus national sur le changement climatique du Canada (Processus national) instauré par les ministres fédéraux, provinciaux et territoriaux responsables de l'énergie et de l'environnement conformément à la directive donnée en 1997 par les premiers ministres de leur gouvernement respectif.

Contexte international

En 1992, le Canada a signé la *Convention-cadre des Nations Unies sur les changements climatiques* (Convention), qui a pour but de stabiliser la concentration de gaz à effet de serre dans l'atmosphère à un niveau qui ne causera pas de perturbation anthropique dangereuse du système climatique. Les parties à la Convention ont jugé que les efforts initiaux ne suffisaient pas et, en 1997, elles ont négocié le Protocole de Kyoto (Protocole). S'il entre en vigueur, celui-ci fixera des objectifs obligatoires de réduction des émissions pour les pays industrialisés qui auront jusqu'à la période entre 2008 et 2012 pour les atteindre. En vertu de l'engagement qu'il a pris, le Canada devra réduire ses émissions de 6 p. 100 par rapport au niveau enregistré en 1990. Ces obligations, il sera aussi possible de les honorer partiellement en intervenant pour faire réduire les émissions dans d'autres pays, conformément aux dispositions du mécanisme de Kyoto. Les négociations se poursuivent depuis 1997 afin de mettre au point les règles et directives du Protocole, et d'établir le cadre décisionnel qui guidera les parties au moment de la ratification.

Processus national

Immédiatement après le début de la négociation du Protocole de Kyoto, les premiers ministres canadiens ont reconnu l'importance du changement climatique et convenu que le Canada devait participer à la résolution du problème. Les premiers ministres ont adopté comme principe directeur que la mise en œuvre du Protocole ne devait constituer pour aucune région un fardeau excessif.

Les premiers ministres ont enjoint les ministres fédéraux, provinciaux et territoriaux de l'Énergie et de l'Environnement d'examiner les répercussions, les coûts et les avantages de la mise en œuvre du Protocole de Kyoto ainsi que les différents moyens permettant de s'attaquer au problème du changement climatique. C'est ainsi qu'au printemps 1998, les ministres de l'Énergie et de l'Environnement ont instauré un Processus national sur le changement climatique, processus intégré qui fait appel à la collaboration.

Le Processus national a mis en place 16 tables de concertation et groupes de travail regroupant 450 spécialistes de l'industrie, du milieu universitaire, d'organisations non gouvernementales et des pouvoirs publics. Les tables de concertation ont passé en revue sept secteurs clés de l'économie et huit stratégies de portée générale. Un groupe chargé de l'analyse et de la modélisation a intégré les résultats à une analyse complète préliminaire de l'incidence des différentes options associées à l'atteinte des objectifs de Kyoto. Aucun autre pays n'a adopté un tel processus ouvert, intégré et exhaustif.

Le Processus national visait deux domaines : la politique et l'analyse. Il a donné lieu à l'élaboration d'une base d'information détaillée renfermant des rapports sur les coûts et les possibilités, des analyses de base, des possibilités technologiques, des modèles et des mesures recommandées.

Le Processus national a mis au jour de nombreux sujets de préoccupation, notamment :

- C la hausse continue des émissions agrégées dans toutes les régions du pays;
- C la grande diversité des activités liées au climat menées dans tous les secteurs de l'économie canadienne, et la réduction subséquente de l'intensité énergétique et carbonique dans presque chacun d'entre eux;
- C les possibilités de prendre immédiatement, pour réduire les émissions de gaz à effet de serre, des mesures qui auront des retombées positives sur l'économie, l'environnement et la santé ainsi que dans le domaine social et ailleurs, et dont bénéficieront les collectivités, les entreprises et les particuliers du Canada;
- C le souhait des intervenants de recevoir plus de directives des gouvernements fédéral, provinciaux et territoriaux et de les voir davantage travailler en harmonie;
- C le besoin d'obtenir des précisions sur les règlements et les accords relatifs au changement climatique, ainsi que sur les possibilités et les coûts pour le Canada;
- C le besoin d'améliorer les analyses scientifiques et économiques, les analyses de l'adaptation, des répercussions et autres afin d'étayer la prise de décisions des gouvernements fédéral, provinciaux et territoriaux.

Approche nationale coordonnée

En 2000, s'appuyant sur le travail du Processus national et reconnaissant l'importante contribution des tables de concertation, les ministres de l'Énergie et de l'Environnement ont mis de l'avant une approche nationale coordonnée à l'égard du problème du changement climatique. Cette approche prévoyait :

- C la Stratégie nationale de mise en œuvre;
- C le Premier plan national d'activités, qui regroupe les mesures individuelles et concertées sous les thèmes clés de la phase Un de la Stratégie nationale.

Aperçu

Le changement climatique constitue un problème prioritaire pour les gouvernements fédéral, provinciaux et territoriaux canadiens, qui s'engagent à gérer les risques qu'il pose en prenant des mesures individuelles et concertées, en encourageant tous les Canadiens à agir et en leur donnant les moyens de le faire.

La Stratégie nationale prévoit la prise des mesures suivantes :

- C agir immédiatement afin de mieux comprendre et de réduire les risques associés au changement climatique ainsi que les coûts et les conséquences des mesures d'adaptation et d'atténuation (voir le Premier plan national d'activités);
- C instaurer un cadre national qui soit souple pour les mesures individuelles et concertées afin de permettre aux ordres de gouvernement d'agir en fonction de leurs propres besoins, situations et possibilités;
- C adopter une approche par étapes qui planifie les décisions ultérieures et permet une action progressive dans le contexte de l'évolution des contextes nationaux et internationaux et de l'amélioration des connaissances;
- C mieux comprendre le fonctionnement du système climatique et les incidences du changement climatique sur le Canada à l'échelle nationale et régionale afin de prendre des mesures de réduction des émissions et d'adaptation aux changements environnementaux;
- C comprendre la corrélation entre les stratégies nationales et internationales;
- C comprendre les répercussions des objectifs et des principales options, y compris les méthodes d'action de portée générale comme l'échange de permis d'émissions et l'attribution de la responsabilité de réduire les émissions, avant de décider des objectifs ou de passer à la phase suivante de la Stratégie.

La Stratégie nationale de mise en œuvre sur le changement climatique est une stratégie conjointe de gestion des risques qui reconnaît et respecte les compétences de chaque ordre de gouvernement.

Les thèmes ou domaines prioritaires de la phase Un de la Stratégie nationale ont été établis. Le Premier plan national d'activités énumère les objectifs de ces domaines ainsi que les mesures menées ou envisagées par les gouvernements fédéral, provinciaux et territoriaux.

A. Stratégie nationale de mise en œuvre du Canada sur le changement climatique – Cadre d'action

La Stratégie nationale de mise en œuvre sur le changement climatique propose un cadre permettant une réponse coordonnée du Canada face au problème du changement climatique. Elle reflète la décision fondamentale prise par les gouvernements fédéral, provinciaux et territoriaux en vue de s'attaquer au problème du changement climatique, en réduisant les émissions de gaz à effet de serre du Canada et en élaborant des stratégies d'adaptation à un contexte changeant.

La Stratégie nationale reconnaît que le changement climatique pose des risques importants pour l'environnement, l'économie, la santé et la vie sociale des Canadiens. Cependant, comme il subsiste beaucoup d'incertitudes, elle a recours à une approche de gestion des risques permettant de concilier ces incertitudes et la nécessité d'agir. Elle préconise la prise de mesures qui réduisent les émissions de gaz à effet de serre, favorisent l'élaboration de stratégies d'adaptation, offrent la possibilité de réagir face aux développements scientifiques et internationaux et permettent au Canada d'être en mesure de prendre des décisions judicieuses et opportunes.

Dans le cadre de la mise en œuvre de la Stratégie, les gouvernements fédéral, provinciaux et territoriaux ont accepté d'élaborer plusieurs plans d'activités où sont décrites les mesures individuelles et concertées. Les mesures prises refléteront ainsi les priorités et les processus décisionnels de chaque gouvernement.

Chaque année, les gouvernements mettront à jour leur plan d'activités à la lumière des nouveaux développements scientifiques et internationaux, ainsi que des leçons tirées des expériences antérieures. Ces mises à jour feront également état de nouvelles mesures.

Les plans d'activités représentent un important pas en avant. Ils montrent que les gouvernements fédéral, provinciaux et territoriaux s'attaquent au problème du changement climatique de manière efficace et opportune, tout en respectant les obligations prises par le Canada sur la scène internationale. Ensemble, le cadre de la Stratégie nationale et les plans d'activités préconisent une approche souple et propice à la concertation, qui reconnaît le lien entre les contextes national et international ainsi que la sphère de compétence des divers ordres de gouvernement.

B. Vision

Inciter les Canadiens à prendre des mesures efficaces – au pays et à l'étranger – afin de réduire les risques que pose le changement climatique, de tirer parti des possibilités d'action et de préserver et d'améliorer leur qualité de vie.

C. Approche de gestion des risques que pose le changement climatique

La Stratégie nationale de mise en œuvre sur le changement climatique fait appel à une approche de gestion des risques qui tente de limiter les risques que pose le changement climatique tout en maximisant les possibilités du Canada de contribuer à la résolution du problème à l'échelle nationale et internationale. La gestion des risques met en pratique ce que nous savons déjà des causes et des incidences du changement climatique, tout en permettant au Canada de prendre les bonnes décisions à mesure qu'il dispose de plus d'information et que l'on réduit les incertitudes. En agissant rapidement pour gérer les risques, on tire progressivement parti de l'expérience à mesure que l'on réduit les incertitudes à court terme et que l'on prend des mesures à long terme.

L'approche de gestion des risques repose sur trois éléments clés :

- C améliorer nos connaissances scientifiques et analytiques;
- C coordonner l'action nationale et internationale;
- C mettre en œuvre une approche par étapes.

Ces éléments ont trait à l'adaptation et à l'atténuation, exigent l'établissement d'un lien entre les contextes national et international, et prévoient la sensibilisation du public et son engagement pour faire avancer les choses et assurer l'exploitation des possibilités.

Même si tous les intervenants s'entendent pour dire que la gestion des risques que pose le changement climatique nécessite un effort concerté afin de réduire les émissions de gaz à effet de serre et d'élaborer des stratégies d'adaptation, il subsiste de nombreux points d'interrogation, entre autres :

- C les incidences du changement climatique sur l'environnement, l'économie et la santé ainsi que dans le domaine social;
- C les effets probables, sur le Canada, des mesures prises par ses principaux partenaires commerciaux;

- C la façon dont les points en litige du Protocole de Kyoto seront réglés, y compris le traitement des puits de carbone forestiers et agricoles, la participation des pays en développement et le régime de conformité;
- C l'utilisation possible d'un instrument économique intersectoriel, par exemple un système national d'échange de permis d'émissions
- C le rythme auquel de nouvelles technologies seront élaborées et adoptées.

L'approche de gestion des risques de la Stratégie nationale prévoit :

- C la prise de mesures progressives et rapides afin de réduire les risques et de s'adapter;
- C la réduction des incertitudes quant au moment, à l'ampleur, à la probabilité et aux répercussions des impacts;
- C la détermination et l'analyse des possibilités d'action afin de se préparer à la prise de décisions ultérieures.

L'action du Canada en réponse au problème du changement climatique peut également influencer profondément sur notre future position concurrentielle. Par exemple, l'importance accordée au changement climatique à l'étranger a déjà créé une demande à l'égard de nouvelles technologies produisant peu d'émissions de gaz à effet de serre. D'autres pays investissent massivement dans ces technologies. Le Canada pourrait jouir d'un avantage concurrentiel en se spécialisant dans les technologies visant à contrer le changement climatique; par ailleurs, s'il n'élaborait pas ces technologies, il pourrait être désavantagé par rapport à ses concurrents.

i) Améliorer nos connaissances scientifiques et analytiques

Selon le Groupe d'experts intergouvernemental sur l'évolution du climat (GEIEC), tout porte à croire que l'être humain a une influence certaine sur le climat planétaire. Selon les prévisions du GEIEC, si les concentrations de gaz à effet de serre doublient, la température moyenne globale augmenterait de 1 à 3,5 degrés Celsius au cours des 100 prochaines années dans le monde. Les répercussions du changement climatique différeront selon les secteurs et les régions du Canada, mais elles pourraient englober :

- C *incidences négatives* : augmentation de la fréquence des événements météorologiques extrêmes comme des tempêtes violentes et des sécheresses; inondations et érosion des régions côtières; forêts et cultures davantage menacées par les parasites, les maladies et les incendies; augmentation marquée du nombre de journées très chaudes dans les villes,

ce qui rend plus vulnérables les enfants, les personnes âgées et les personnes ayant des problèmes respiratoires; importants changements dans l'emplacement des lieux de pêche et les prises de poissons;

- C *incidences positives* : saisons de croissance plus longues et plus chaudes pour les produits agricoles; hivers plus doux, ce qui pourrait réduire la quantité d'énergie requise pour chauffer les maisons et les bâtiments.

On observe déjà les répercussions négatives prévues du changement climatique dans de nombreuses régions, en particulier dans le Nord, où les températures augmentent et où les incidences de ces changements servent de signal d'avertissement pour le reste du Canada. Les effets globaux du changement climatique sur les peuples autochtones ayant un style de vie traditionnel sont plus prononcés dans le Nord qu'ailleurs, puisque le niveau de précipitations a augmenté dans de nombreuses collectivités septentrionales, menaçant les habitats des animaux et leur survie.

Même si nous comprenons de mieux en mieux ces incidences, on ne connaît pas encore très bien les causes, l'ampleur et le rythme du changement climatique; les répercussions physiques et socio-économiques à l'échelle régionale et sectorielle; et notre capacité d'adaptation. Pour atténuer ces incertitudes, il y a lieu d'améliorer notre connaissance scientifique et analytique du phénomène et de notre vulnérabilité au changement climatique. Il nous faut nous concentrer sur les domaines suivants : l'observation et la modélisation systématiques du climat mondial, notre capacité d'adaptation aux conséquences du changement climatique, et des recherches socio-économiques sur les impacts régionaux et sectoriels du changement climatique et les possibilités d'intervention stratégique.

En améliorant nos connaissances, nous étairons :

- C la position du Canada dans les négociations internationales à court terme;
- C une évaluation du rythme voulu de l'action internationale à long terme;
- C les possibilités et stratégies visant à réduire les émissions nationales;
- C les mesures ayant pour but d'améliorer notre capacité d'adaptation (c'est-à-dire possibilités de réduire les incidences négatives et de tirer parti de toute incidence positive).

ii) **Coordonner l'action nationale et internationale**

Le changement climatique est un problème mondial qui nécessite la mobilisation de la communauté internationale toute entière pour que notre intervention soit efficace. Le rôle de premier plan joué par les pays développés est important, mais encore faut-il s'assurer de l'engagement à long terme de tous les pays si l'on veut réussir de manière durable.

La Convention-cadre des Nations Unies sur les changements climatiques plante le décor qui permettra une intervention dynamique sur la question du changement climatique. Le Canada a toujours joué un rôle central dans l'intendance mondiale de l'environnement et va faire sa part pour répondre au problème du changement climatique.

Les objectifs du Canada façonnent les efforts et les accords internationaux et sont façonnés par eux. Tout comme la compréhension des priorités nationales aide le Canada à définir sa stratégie internationale de négociation, les ententes internationales sur le changement climatique lui donnent un cadre qui lui permet d'atteindre ses objectifs environnementaux.

À mesure que nous progresserons, le Canada devra amener le secteur privé à participer aux efforts visant le changement climatique et le soutenir dans cette voie. Sur la scène internationale, le Canada devra chercher à établir des liens économiques et environnementaux qui aideront les entreprises canadiennes engagées dans des activités commerciales ou investissant à l'étranger.

Il est primordial pour le Canada de maintenir des liens étroits entre les négociations internationales et ses décisions nationales s'il veut obtenir une réponse maximale en matière d'environnement et le faire de façon à favoriser un développement durable.

Les objectifs internationaux du Canada consistent :

- à renforcer au maximum la capacité du Canada de remplir ses engagements au moindre coût possible, par la poursuite active d'instruments reposant sur les mécanismes du marché, l'obtention de conditions favorables pour les puits et les réservoirs, et d'autres mesures;
- à contribuer à la réalisation des objectifs mondiaux relatifs au changement climatique et à uniformiser les règles du jeu avec les concurrents du Canada en assurant une participation maximale des principaux pays développés et en développant à l'effort mondial contre le changement climatique;
- à multiplier les possibilités pour les entreprises canadiennes de participer aux projets internationaux concernant le changement climatique.

La Convention établit clairement que le manque de certitude ne doit pas devenir un obstacle à l'action. Il reste encore à résoudre un certain nombre de problèmes stratégiques internationaux, y compris ceux du Protocole de Kyoto. Nos décisions doivent aussi être guidées par les interventions des autres États, en particulier nos principaux partenaires commerciaux. Par exemple, il nous faut encore déterminer quelle sera la nature du système international d'échanges de permis d'émissions. Suivant sa conception, il est clair que ce système influencera les décisions nationales. Pour finir, dès que les parties à la Convention se seront entendues sur des règles internationales de mise en œuvre du Protocole de Kyoto, il sera essentiel d'agir rapidement pour assurer la stabilisation du contexte stratégique.

iii) Mettre en œuvre une approche par étapes

Le Canada doit être en mesure de prendre les bonnes décisions au bon moment. Toute stratégie efficace de gestion des risques doit prévoir une série de décisions et de mesures planifiées étayées par une connaissance plus approfondie des sciences et des contextes politiques internationaux et nationaux.

La Stratégie nationale préconise une approche à plusieurs étapes permettant de prendre d'emblée des mesures judicieuses pour ensuite assurer un suivi systématique et rajuster le tir en fonction des nouveaux développements. Cette approche par étapes démontre clairement que le gouvernement entend réellement s'attaquer au problème du changement climatique, tout en reconnaissant les incertitudes qui influenceront sur les mesures prises ultérieurement.

La Stratégie nationale prévoit la prise de mesures progressives par étapes face au problème que pose le changement climatique, d'après les décisions prévues arrêtées à la lumière de l'évolution des contextes nationaux et internationaux. Elle facilite l'intervention par tous les ordres de gouvernement en offrant une stratégie et un cadre impartial en ce qui concerne la ratification du Protocole de Kyoto, tout en faisant progresser le travail d'élaboration de politiques et d'analyse requis pour prendre toute décision concernant la ratification du Protocole.

La décision de passer d'une étape à l'autre entraîne une prise de mesures de plus en plus progressives à l'égard du changement climatique et nécessite une bonne compréhension intergouvernementale des répercussions des engagements du Canada sur l'environnement, l'économie, la santé et la vie sociale. La progression nécessite également un travail d'analyse permanent à chaque étape qui appuiera les décisions stratégiques prises dans le cadre de cette étape et étaiera l'étape suivante.

Phase Un

La phase Un de la Stratégie nationale de mise en œuvre se poursuivra jusqu'à ce qu'une entente internationale efficace sur le changement climatique (p. ex., Protocole de Kyoto ou entente subséquente) soit ratifiée. Les analyses politiques et techniques menées pendant la première phase étayeront la décision de passer à la deuxième phase.

La phase Un appuie les mesures les plus économiques possible qui procurent d'importants avantages sociaux, économiques, environnementaux et sanitaires, jettent les bases d'autres mesures progressives et donnent le branle à leur application. Certaines mesures de la phase Un favoriseraient l'exploitation de possibilités qui, autrement, seraient perdues ou qui nécessitent une longue préparation pour être exploitables dès la phase Deux. La phase Un doit inciter un large groupe représentatif de Canadiens à agir maintenant afin de réduire les émissions globales du Canada et de réduire ses coûts à l'avenir.

La phase Un de la Stratégie nationale compte cinq thèmes connexes :

1. **Accroître la sensibilisation et la compréhension** – Informer, éduquer et sensibiliser les Canadiens au sujet de l'aspect scientifique et des conséquences du changement climatique, y compris la capacité de s'adapter, de mettre en place un large appui afin de faire du changement climatique la priorité et d'encourager et de motiver les Canadiens et les entreprises à prendre des mesures afin de réduire les émissions de gaz à effet de serre.

2. **Promouvoir le développement et l'innovation technologiques** – Accroître l'accès aux nouvelles technologies qui aident à réduire les émissions de gaz à effet de serre et promouvoir les possibilités commerciales, au Canada et à l'étranger, pour les entreprises canadiennes qui mettent au point de nouvelles technologies produisant peu d'émissions de gaz à effet de serre. Il s'agit entre autres de trouver de nouveaux moyens d'atteindre les objectifs en matière d'émissions dans le délai établi à Kyoto et par la suite.
3. **Les gouvernements donnent l'exemple** – Donner l'exemple et faire savoir aux Canadiens que le changement climatique est un problème auquel il faut s'attaquer. Les pouvoirs publics doivent mettre de l'ordre chez eux en accroissant l'efficacité énergétique des édifices et des véhicules leur appartenant, en réduisant leur consommation d'énergie et en achetant des produits et du matériel écologiques. Les gouvernements peuvent donner l'exemple en faisant connaître leurs pratiques exemplaires aux autres, aux collectivités et au secteur privé.
4. **Investir dans la connaissance et bâtir la fondation** – Faire en sorte que les décideurs aient les connaissances, la capacité et l'expérience requises pour prendre des décisions éclairées et poser les jalons de l'action future. On compte quatre volets : modélisation (étayer le travail sur l'analyse et la modélisation); international (informer et appuyer la position du Canada dans les négociations internationales); sciences, incidences et capacité d'adaptation (réduire l'incertitude scientifique dans les domaines importants pour les objectifs du Canada et mieux comprendre les incidences afin de trouver des moyens de s'adapter au changement climatique); et possibilités de politiques ultérieures, comme l'échange de permis d'émissions nationaux.
5. **Encourager les mesures** – La phase Un met l'accent sur sept secteurs de l'économie (agriculture, bâtiments, électricité, foresterie [puits], industrie, municipalités et transports) et sur des stratégies intersectorielles. Les stratégies sectorielles déclenchent la prise de mesures immédiates visant à réduire davantage les émissions de gaz à effet de serre et à commencer à élaborer des stratégies afin de s'adapter aux répercussions du changement climatique. Les stratégies intersectorielles feront également fond sur les stratégies en place et ouvriront la voie à d'autres réductions importantes.

On retrouvera dans les plans d'activités triennaux mis à jour tous les ans des détails sur les mesures en cours et proposées face au changement climatique.

Phases ultérieures

Les phases ultérieures dépendent des décisions qui seront prises concernant l'intervention du Canada à l'égard du problème du changement climatique et de la nature des engagements internationaux. La décision de passer à la phase Deux est liée à une plus grande incertitude internationale quant à la ratification du Protocole de Kyoto, aux mesures prises par nos principaux partenaires commerciaux et à une plus grande précision au pays concernant les grandes méthodes d'action et mesures requises pour mettre en œuvre une entente. La préparation pendant la phase Un inclut l'élaboration et l'analyse des principales options, de sorte que les gouvernements et les intervenants comprennent ces options et leurs répercussions. Par exemple, la phase Un prévoit des discussions et des analyses d'autres approches, comme l'allocation et les échanges de permis d'émissions nationaux, ainsi que l'étude de possibilités comme l'amélioration des puits, les échanges volontaires et les mécanismes de souplesse internationaux.

Si le Canada ratifie le Protocole de Kyoto, la phase Deux s'étendra sur la période située entre la ratification et le début de la première période d'engagement, en 2008. Elle portera principalement sur les questions comme la mise en œuvre de tout instrument économique important (p. ex., un système national d'échanges des permis d'émissions) et l'attribution éventuelle d'une responsabilité à l'égard d'un objectif national de réduction des émissions. Par ailleurs, la phase Trois et les phases ultérieures engloberont les périodes d'engagement du Canada et porteront sur la nécessité de procéder aux réductions convenues et d'agir en fonction de l'évolution de la situation nationale et internationale.

D. Faire face au changement climatique – Atténuation et adaptation

La Stratégie nationale reconnaît la nécessité d'agir rapidement. Le changement climatique est une réalité indéniable; en attendant qu'on clarifie le régime international et les connaissances nationales pour prendre des mesures, on risque de perdre beaucoup de temps. En agissant maintenant, on évite une augmentation des coûts et des difficultés à réduire plus tard les émissions de gaz à effet de serre et on tire parti des marchés nationaux et internationaux naissants pour les nouveaux produits et services reliés au climat.

Toute approche efficace à l'égard du problème que pose le changement climatique doit comprendre deux volets distincts : réduction des émissions de gaz à effet de serre (atténuation) et réaction face aux effets (adaptation).

L'atténuation sous-entend la prise de mesures directes dans les secteurs économiques afin de réduire la quantité de gaz à effet de serre relâchés dans l'atmosphère. L'atténuation ne signifie pas une diminution de la croissance économique ni, inversement, une hausse des niveaux d'émissions en raison d'une hausse de la croissance économique. Toute stratégie d'atténuation efficace vise plutôt à modifier la relation entre la croissance économique et les émissions de gaz à effet de serre, afin d'assurer la poursuite de cette croissance tout en réduisant les émissions.

Les efforts en matière d'atténuation reposeront sur des mesures déjà prises par les gouvernements fédéral, provinciaux et territoriaux, des administrations municipales, des organisations non gouvernementales et des particuliers afin d'encourager l'innovation et les solutions axées sur le marché pour réduire les émissions de gaz à effet de serre. Les stratégies à long terme englobent :

- C la réduction de la consommation d'énergie de tous les secteurs grâce à une modification de leur comportement (économie) et à un investissement dans des technologies et méthodes éconergétiques;
- C l'accroissement de l'efficacité carbonique de l'ensemble des sources d'énergie en investissant dans des technologies et combustibles contenant peu ou pas de carbone;
- C la capture des émissions directement aux fins de stockage ou d'utilisation;
- C la séquestration du carbone au moyen de procédés biologiques;
- C la réduction des sources non énergétiques comme les émissions provenant du bétail.

Une bonne capacité d'adaptation réduit la vulnérabilité aux effets d'un climat changeant. L'adaptation nécessite la prise de mesures pour réduire les incidences négatives du changement climatique au Canada et la mise à profit de toute incidence positive (p. ex., saisons de croissance plus longues et plus chaudes). Pour s'adapter, il sera peut-être également nécessaire de prendre des mesures d'économies d'eau (pour s'adapter à un approvisionnement réduit en eau et à l'évolution de l'offre et de la demande d'énergie) et des mesures d'urgence et d'effectuer des examens prospectifs des normes, des codes et des règlements d'utilisation des édifices et des terrains.

Il n'existe pas une seule et unique approche qui permettra de s'adapter aux changements dans toutes les régions ou de réduire les émissions de gaz à effet de serre dans tous les secteurs de l'économie. Tout comme les problèmes et les possibilités diffèrent selon la région, les stratégies devront être adaptées. Ces différentes stratégies jettent les bases des plans d'activités triennaux du Canada mis à jour tous les ans (voir la section F).

E. Marge de manœuvre et coordination des ordres de gouvernement

La diversité régionale est un élément important dans la mise en œuvre d'une stratégie nationale sur le changement climatique. Les niveaux d'émissions de gaz à effet de serre varient grandement d'une province et d'un territoire à l'autre, ce qui témoigne de la diversité des régions du Canada sur le plan de la densité de population, des activités de fabrication et des ressources. La reconnaissance du fait que les divers ordres de gouvernement sont habilités à élaborer des programmes particuliers et jouissent de la marge de manœuvre voulue pour tenir compte de leur propre contexte sert de base à la Stratégie nationale. En fait, de nombreux ordres de gouvernement ont déjà adopté leurs propres plans d'action. Par ailleurs, une stratégie nationale est requise pour assurer la coordination entre les différents ordres de gouvernement ainsi qu'entre les gouvernements, les organisations non gouvernementales et le secteur privé.

La Stratégie nationale de mise en œuvre et les plans d'activités connexes sensibiliseront la population au problème, enverront un message concerté aux intervenants clés, aideront à axer les mesures sur les priorités communes, permettront d'acquérir des connaissances communes en analyse, aideront à se préparer à prendre des décisions stratégiques clés et faciliteront l'élaboration et la prestation de programmes coordonnés. En même temps, la Stratégie et les plans d'activités sont souples et reconnaissent les secteurs de compétences, les différences dans les circonstances régionales et le besoin des gouvernements de répondre à chaque priorité.

Même s'il incombe avant tout aux ministres de l'Énergie et de l'Environnement d'élaborer la réponse de leur gouvernement respectif au changement climatique ainsi que les stratégies coordonnées, d'autres conseils ministériels participent à la résolution du problème que pose le changement climatique dans des domaines comme les transports, l'agriculture, la foresterie et l'industrie. Une étroite coordination entre tous les conseils sectoriels concernant le changement climatique et l'élaboration de politiques portant sur d'autres questions devra se poursuivre pour assurer une stratégie intégrée en matière de changement climatique.

F. Plans d'activités triennaux mis à jour tous les ans

La Stratégie nationale propose une série de plans d'activités triennaux qui seront mis à jour tous les ans à mesure que les gouvernements iront de l'avant avec la mise en œuvre. Chaque année, les plans d'activités seront surveillés, mis à jour à la lumière des nouveaux problèmes, possibilités et données scientifiques et analytiques et présentés aux ministres de l'Énergie et de l'Environnement.

Les deux ou trois premiers plans d'activités porteront probablement sur la phase Un, chaque plan d'activités consécutif renforçant les mesures mises en œuvre auparavant et prévoyant de nouvelles interventions le cas échéant.

Chaque plan d'activités triennal mis à jour annuellement :

- C aura des objectifs clairs;
- C déterminera des mesures particulières et concrètes que les gouvernements et d'autres partenaires (organisations non gouvernementales et secteur privé) se sont engagés à prendre;
- C déterminera les mesures que les gouvernements envisagent de mettre en œuvre dans la période de trois ans, ainsi que celles nécessitant un travail plus approfondi et des consultations avant d'être approuvés et mises en œuvre par la suite;
- C suivra les progrès et en fera état publiquement.

Sur une base régulière, les ministres de l'Énergie et de l'Environnement :

- C recevront des évaluations de la mise en œuvre des plans d'activités;
- C examineront et approuveront le plan d'activités suivant.

G. Examen et mise à jour

La présente Stratégie nationale reflète le consensus qui s'est dégagé des réunions conjointes des ministres fédéraux, provinciaux et territoriaux canadiens responsables de l'énergie et de l'environnement concernant le meilleur moyen de s'attaquer au problème du changement climatique.

Les ministres de l'Énergie et de l'Environnement devront examiner régulièrement la Stratégie nationale en raison de l'évolution des circonstances internationales et nationales et des progrès dans la mise en œuvre des plans d'activités.



Processus
national sur le
changement
climatique

CANADA'S NATIONAL IMPLEMENTATION STRATEGY ON CLIMATE CHANGE

ANNEX 1 SCIENCE, IMPACTS and ADAPTATION

Climate change science and socio-economic research underpin Canada's ability to respond and adapt to climate change in the long term. Research and monitoring alert decision-makers to the potential impacts of climate change, which in turn informs Canadian positions in international negotiations, domestic responses to climate change and efforts to educate Canadians about climate change.

An understanding of the science of climate change provides the background and rationale for action on climate change. Action in this context refers to both *mitigation* (i.e., measures to reduce greenhouse gas emissions), and *adaptation* (measures to reduce negative impacts). The combination of mitigation and adaptation measures forms the core of an appropriate risk-management approach to climate change.

National Implementation Strategy on Climate Change — Block 1: Science, Impacts and Adaptation provides an overview of the current state of science on climate change, and outlines the potential impacts of climate change, both globally and in different regions of Canada. Nevertheless, there are areas of continued uncertainty in climate science, particularly with respect to the potential rate and nature of regional climate changes.

Background and History

The greenhouse effect refers to the natural ability of the atmosphere to insulate the Earth's surface from heat loss. More than two-thirds of the radiation from the sun passes through the clear atmosphere and is absorbed by the Earth's surface. This energy is returned to the atmosphere, absorbed and re-emitted by greenhouse gases such as water vapor, carbon dioxide, methane, and nitrous oxide. This process keeps the average global temperature of the Earth at approximately 15° Celsius - 33° warmer than if the greenhouse effect did not exist.

Land surfaces, the biosphere and oceans play an important role in the climate system by both absorbing and releasing CO₂. As such, they act as both carbon *sinks* (or reservoirs) and as *sources* of greenhouse gas emissions at different points in their cycles.

The concept of climate change, or changes in the composition of the atmosphere resulting directly or indirectly from human activity, dates back more than one hundred years. International scientific collaboration on climate change began to accelerate in the 1970s. In 1988, the United Nations Environment Program and the World Meteorological Organisation established the Intergovernmental Panel on Climate Change (IPCC) to assess scientific research on climate change, including its environmental impacts and potential remedial measures.

The IPCC, which engaged a large number of leading scientists in a range of relevant fields, has played a critical role internationally in providing a rationale for global action on climate change. The *First Assessment Report* by the IPCC, released in 1990, led to the signing of the *United Nations Framework Convention on Climate Change* in 1992. In addition, the IPCC's 1995 *Second Assessment Report*, which noted that "...the balance of evidence suggests that there is a discernible human influence on global climate," formed the impetus for the international negotiations that resulted in the signing of the Kyoto Protocol in December 1997.

Continuous improvement in our understanding of both the state of the climate system and how it works will be key to national and international decision-making in the years ahead. The IPCC's *Third Assessment Report*, due in 2001, will assess new findings regarding the scientific, technical and socio-economic implications of climate change. This report will be an important milestone in the evolution of understanding climate change.

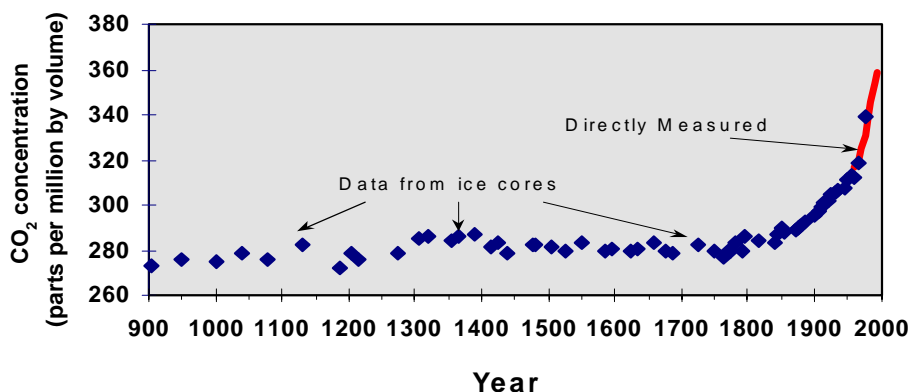
Key Scientific Findings to Date

Finding #1: Human activities are changing the composition of the atmosphere.

The Earth's atmosphere is constantly modified by complex interactions within the climate system. Until relatively recently, these interactions were not understood to be greatly influenced by human activities. According to data collected from polar ice cores, concentrations of CO₂ (the most prevalent greenhouse gas) were stable at approximately 280 parts per million by volume (ppmv) for the 10 000 years between the end of the last glaciation and the beginning of the 19th century.

However, it is now apparent that since the beginning of the 19th century CO₂ concentrations have increased by approximately 30%. Business-as-usual projections estimate that concentrations of CO₂ will at least double pre-industrial levels by the end of the 21st century.

Figure 1.1: Changes in carbon dioxide concentrations during the past 1000 years, based on ice core data and direct atmospheric observations



(Source: Canadian Climate Program Board)

Finding #2: Most scientists believe that changes in atmospheric concentrations of CO₂ will affect the global climate.

Many scientists project that these increases in atmospheric CO₂ concentrations will cause significant changes to regional and global climates and related climate indicators such as temperature, precipitation and sea level.

Sophisticated computer models are being used by the international scientific community to explore how the global climate system might respond to increased atmospheric concentrations of CO₂. Results from these models are often expressed as a doubling of CO₂, which could occur as early as the second half of the 21st century.¹

While uncertainties remain with respect to the timing and rate of these changes, the IPCC's *Second Assessment Report* suggested that the *average global surface temperature is likely to increase by between 1° and 3.5°C by 2100*. Already, the rate and duration of warming in the 20th century were greater than at any other time in the past 1000 years. Large and rapid changes to the climate system have occurred in the past and are difficult to predict. However, we know that when the climate system is forced rapidly, as we are doing now, unexpected behaviour can occur.

The impacts of such changes could be significant: sea levels are projected to rise, and both the hydrological cycle and forests could undergo major changes globally. Regional increases in so-called extreme weather events such as severe storms, heat waves, floods,

¹ This doubling of CO₂ is expected to occur even if the provisions of the Kyoto Protocol are fully met by all participating countries, thereby underscoring the need for adaptation measures as part of an overall response strategy.

and drought, are also projected to result. Consequences for ecosystems and socio-economic systems may, according to the IPCC, also occur as a result of rising temperatures. Emerging scientific consensus suggests that changes will not be experienced in steady progression, but rather through changes in the intensity and frequency of natural variability in the climate system.

In assessing the impacts of climate change, it is important to consider both global and regional aspects. Because regions differ substantially in their vulnerability and their capacity to climate change and other environmental stresses, the consequences of climate change may be borne inequitably. There may be some potentially positive impacts for certain regions and sectors of the economy, such as warmer winters and extended growing seasons. However, many regions are likely to experience *adverse* effects of climate change, some of which are potentially irreversible.

Most computer models project that the greatest climatic changes will be felt in countries of high latitudes, such as Canada. The tropics are expected to experience the least change, although many tropical countries have less capacity to adapt and would thus be more vulnerable to impacts. Continents are expected to experience greater warming than oceans, and winters are expected to warm more significantly than summers. An accelerated global hydrological cycle is also projected by most models, as well as increased winter precipitation and soil moisture in high latitudes (above 60° North).

Finding #3: Changes consistent with these projections are already being observed.

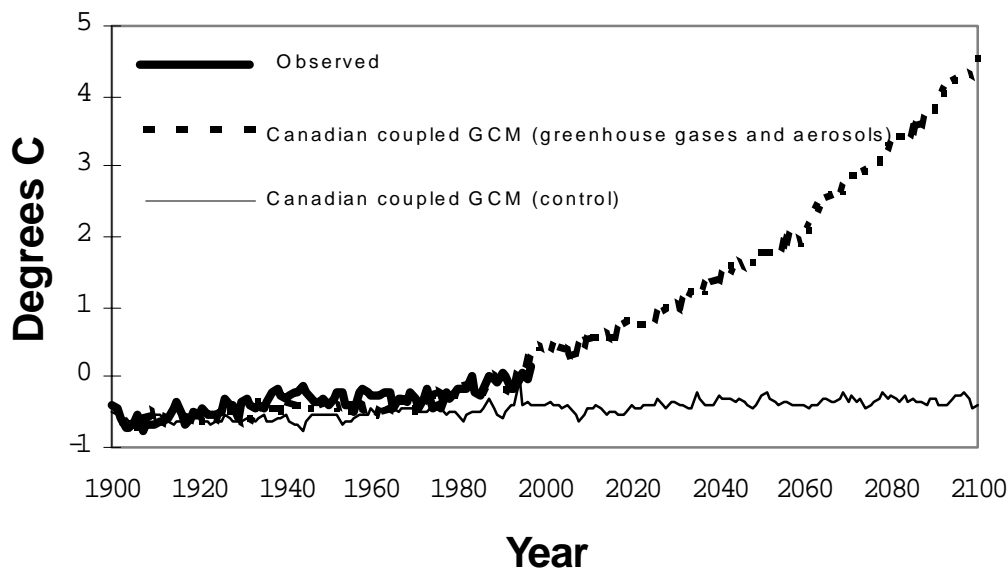
The global climate system is already changing. According to the World Meteorological Organization, the Earth's global mean surface temperature in 1998 was the highest since instrument records were introduced worldwide in 1860, and was almost 0.7°C warmer than at the end of the 19th century. In addition, seven of the 10 warmest years on record have occurred in the 1990s.

Other climate-related trends are also evident worldwide. For example, from the mid-1960s to the mid-1990s, losses from climate-related disasters increased from approximately \$5 billion to \$50 billion per year worldwide. This increase is partly attributable to the larger populations and infrastructure exposed to these events.

Implications for Canada

Although computer models are not specifically designed to do precise regional projections, these models suggest that a doubling of atmospheric CO₂ concentrations could rapidly intensify the warming pattern that has been experienced in Canada in the past century. According to these models, by 2050 central and northern Canada will warm by as much as 5°C, with increases of 3–4°C projected for western coastlines. Even greater warming is projected for the Arctic, but slower warming is expected on the Atlantic coast. The rest of the country could experience warming in the 3–5°C range. Overall warming projections to the year 2100 from these models are outlined below.

Figure 1.2: Global Warming projections to 2100 from the Canadian coupled Global Climate Model



(Source: Canadian Climate Program Board²)

Such changes would have profound impacts on the Canadian landscape. For example, it is estimated that increasing temperatures could move the climate suitable for the treeline significantly northward during the 21st century. It is further estimated that for every 1° C increase in water temperature, the habitat for many ocean fish species shifts poleward by approximately 150 km. The frequency and intensity of severe weather events are projected to increase in all areas of the country, as are heat waves, leading to higher incidences of smog in large urban centres such as Montréal, Toronto and Vancouver.

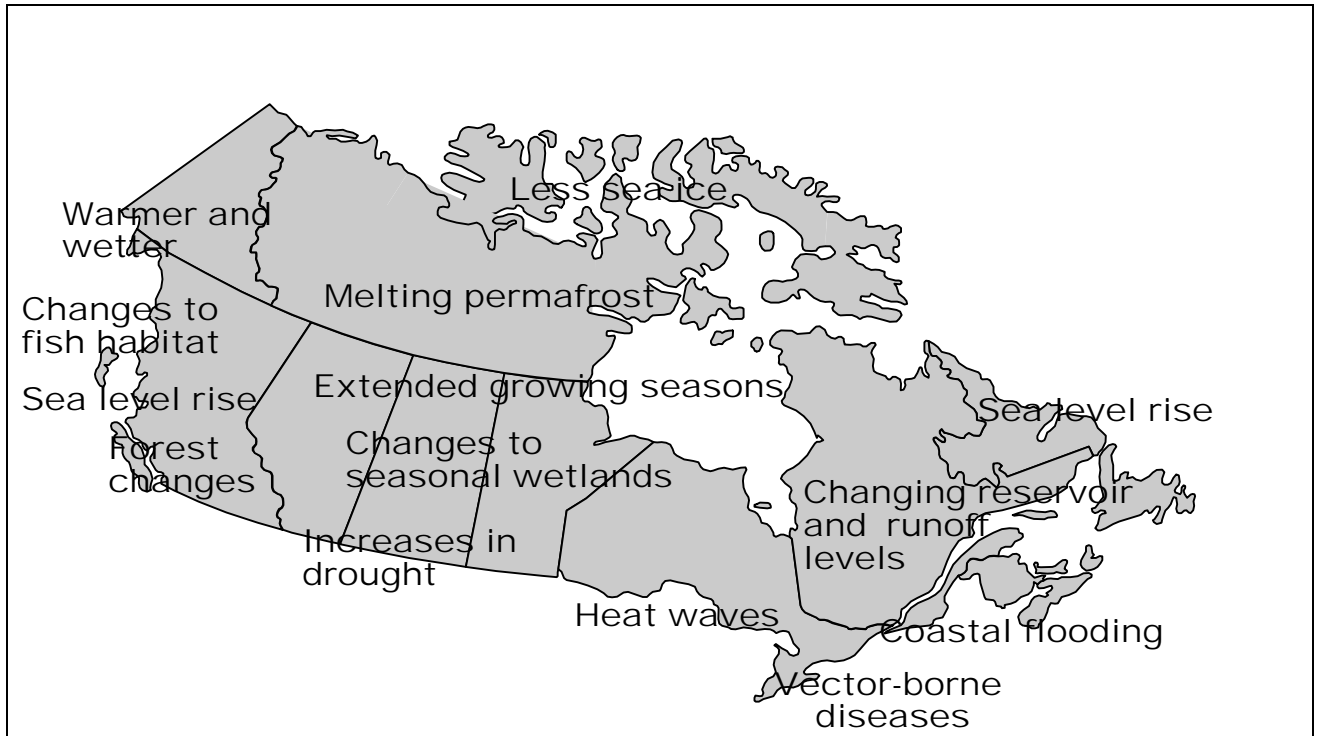
Research also suggests that Canada is particularly vulnerable to extreme weather events. Increases in the frequency and intensity of these events could have serious impacts on natural resources and infrastructure across the country, with related implications for the insurance industry and associated public sectors. These impacts are likely to be severe in the North, where melting permafrost could put major structures such as buildings and pipelines at risk.

Climate change impacts will vary in different regions of Canada, necessitating the development of flexible and varied responses across the country. While regional and local impacts remain extremely difficult to project given current modelling and observation

² Taken from *Understanding and Adapting to Climate Change: A Canadian Perspective*. Foundation Paper — Climate Change Science, Impacts and Adaptation. Canada's National Implementation Strategy, Canadian Climate Program Board, November 1998.

capacity, Canadian studies such as the Canada Country Study have summarized a range of potential regional impacts for Canada, which are outlined below.

Figure 1.3: Regional variations in climate change impacts



(Source: Canadian Climate Program Board)

According to Canadian research, reduced soil moisture is a particular concern for the Prairies, which are projected to undergo the greatest warming and associated soil moisture changes in the country. This in turn could adversely affect the agricultural sector, reducing crop yields.

Temperature increases in Western Canada could shift treelines and sparsely treed transition zones northward, although this expansion may be limited by the ability of species to migrate. Warmer and drier conditions are also likely to bring about greater pest infestations and increase the number of forest fires. In northern communities, issues of particular concern include increased landslides and sinking of terrain, with increased permafrost thaw projected beneath buildings, utility systems, roads, railroads, pipelines, dams and dykes.

Climate change is also projected to affect the hydrological cycle in some regions, both in terms of water quantity and quality. For example, water flows between the Great Lakes may decrease by as much as 20% by the year 2050. However, demand along the Great Lakes for water for electricity generation as well as municipal and agricultural uses will continue to increase with population growth.

Canadian Contribution to Climate Science, Impacts and Adaptation

The study of climate science, impacts and adaptation plays a critical role in informing decision-makers of the potential impacts of climate change across the country. This information underpins Canada's climate change strategy by enabling governments to adopt a risk-management approach to mitigation and adaptation.

Canadian science has also played an essential role in informing some of the international conclusions described above. Canada's contribution to climate science includes developing and running climate models to determine potential future climate changes, observing and tracking climate trends and variations in Canada, and participating in international scientific programs such as the IPCC.

Impacts and adaptation research has identified some of the vulnerabilities to climate change of Canada's sectors and regions.

Additional research in a variety of areas is being supported through a number of initiatives. For example, the federal Climate Change Action Fund, which supports research in the study of climate science, impacts and adaptation, was recently renewed until 2003. In addition, the federal government recently allocated \$60 million to the Canadian Foundation for Climate and Atmospheric Sciences, which will build scientific capacity and encourage collaborative research with universities across Canada. . For the next six years, this new foundation will provide research grants for Canadian scientists to strengthen and maintain Canada's research capacity in climate-related fields, and in the areas of air quality and severe weather.

Domestic Responses to Climate Change

The assessment of potential impacts of climate change across the country informs the work of policy-makers to develop an effective risk-management strategy.

Responding to climate change is challenging for decision-makers. A number of areas of scientific uncertainty remain with respect to climate change, such as the rate of change and particular regional changes. At the same time, climate change could result in irreversible damage to the global climate and the ecosystems it supports. Long planning horizons and long time lags between emissions and potential effects further complicate this challenge.³

An effective risk-management approach to climate change involves several elements, including mitigation and adaptation measures. Mitigation means reducing or eliminating human influences on the climate, primarily by reducing greenhouse gas emissions.

³ *IPCC Second Assessment Report*, Article 1.9

Adaptation in this context refers to actions required to adjust to future changes in the climate, to both minimize negative impacts and take advantage of new opportunities.⁴

Need for Adaptation

Although the greenhouse gas reduction commitments undertaken by developed countries under the Kyoto Protocol represent a step in reducing greenhouse gas emissions, they will only slow the rate at which atmospheric concentrations of greenhouse gases will double. It therefore appears likely that some impacts from climate change will be felt globally. As a result, the international community has emphasized the importance of preparing to adapt to climate change, in addition to reducing emissions to mitigate its effects.

To adapt, Canada needs to take steps to reduce its environmental and socio-economic vulnerability and to maximize opportunities associated with climate change. Adaptation encompasses both scientific research and measures to reduce or avoid the negative impacts of climate change. Early planning involving both communities and industry will be essential.

Adaptation measures range from acting to reduce vulnerability to climate change to stopping activities that are not sustainable under the changed climate or moving particular activities or systems. Key adaptation measures from a Canadian perspective are likely to include water conservation measures (to adapt to reduced water availability and changing energy supply and demand), emergency preparedness and response, and future-oriented reviews of building and land use standards, codes and regulations.

Ongoing Science, Impacts and Adaptation Needs

Responding to climate change will require ongoing scientific efforts to understand what is happening to the climate, how it operates, our vulnerability to climatic changes, and what kinds of mitigation and adaptation measures are necessary. Uncertainties currently remain regarding the impacts, magnitude and timing of climate change.

Ongoing research is important to:

- enhance our capacity to understand and make projections of the climate and anticipate future impacts on Canadians and its socio-economic and environmental systems;
- identify critical thresholds in our climate-sensitive systems;
- prepare Canadians to reduce their exposure to risks from climate change, and provide them with information to make wise choices regarding emission reductions and adaptation measures;
- make a contribution to global efforts aimed at understanding the climate, its future evolution and possible impacts; and

⁴ Definitions are drawn from *Prairie Climate Adaptation: Public Outreach Workshop Backgrounder*, March 1999

- meet Canada's United Nations *Framework Convention on Climate Change* and Kyoto Protocol commitments with respect to systematic observations, climate research, and impact and adaptation studies.

An effective domestic science, impacts and adaptation strategy to support the ongoing elaboration of the national implementation process on climate change needs to address:

- systematic observations to monitor the climate;
- research to better understand how the climate system operates;
- improved measurement and reporting of greenhouse gases emitted, stored and sequestered;
- research into the behaviour of carbon sources and sinks (as well as the potential of Canada's carbon sinks);
- research on the sensitivities to climate change in our human, natural and socio-economic systems, including the identification of critical thresholds and our current capacity to adapt; and
- the development of adaptation response strategies.

In addition, the results of these programs must be communicated clearly to the public and shared with the international community. It is vital that Canadians understand the science of climate change, both in terms of what is known and what is unknown.

CANADA'S NATIONAL IMPLEMENTATION STRATEGY ON CLIMATE CHANGE

ANNEX 2 INTERNATIONAL CONTEXT

Two key factors influence the development of Canada's national implementation strategy on climate change. The scientific evidence alone provides a powerful rationale for both domestic and international action. Moreover, because climate change is a global issue, managing the risks associated with it demands a global framework for action that encourages effective domestic action.

Efforts to effectively respond to climate change are complicated by several factors, including uncertainty about the rate of climate change and its impact, the irreversibility of its effects and the considerable time lag between greenhouse gas emissions and their effects. These factors all point to the need for a precautionary approach and the adoption of preventive measures as well as measures designed to minimize the damage. This requires an effective risk management strategy that includes actions to *mitigate* the effects of climate change (including both emission reduction measures and activities to enhance carbon sinks) as well as measures that promote *adaptation*.

However, implementing such a risk-management approach poses particular challenges to policy- and decision-makers because nations and regions do not contribute uniformly to global greenhouse gas emissions, nor will they be uniformly affected by its impact.

Addressing climate change also goes to the very heart of most modern economies — namely, how we produce and use energy. Therefore, in addition to considering how climate change will affect them, nations must also carefully assess the impact of potential abatement measures on their economic infrastructure and international competitiveness. Canada, for example, must take into account how its major trading partners, particularly the United States, will respond. Remaining competitive is therefore an essential component of Canada's risk management strategy for climate change.

The purpose of this document is to provide an overview of key aspects of the international climate change debate. This includes the international negotiations surrounding the United Nations *Framework Convention on Climate Change* and Kyoto Protocol, as well as some of the outstanding issues on the international agenda, including the likely directions of the negotiations over the next few years.

Brief History of the UN Framework Convention on Climate Change

International action on climate change has developed relatively quickly in the last 30 years. The United Nations Conference on the Human Environment, held in Stockholm in 1972, was the first international meeting to identify human-induced climate change as a pressing global issue.

Governments first translated this concern into calls for greenhouse gas emission reductions in 1988. At the Toronto Conference on the Changing Atmosphere in 1988, scientists and policymakers from 46 countries recommended that CO₂ emissions be cut by 20 percent from 1988 levels by the year 2005. The Intergovernmental Panel on Climate Change (IPCC) was established that same year to assess the state of scientific research on climate change and its potential effects.

The IPCC's first scientific assessment in 1990 launched the first formal negotiations toward an international agreement on climate change. The *United Nations Framework Convention on Climate Change* was subsequently signed by 154 nations at the 1992 United Nations Conference on Environment and Development in Rio de Janeiro (also known as the Earth Summit).

United Nations Framework Convention on Climate Change

The overall objective of the Convention is to stabilize atmospheric concentrations of greenhouse gases at a level that prevents “dangerous anthropogenic interference with the climate system.”¹ The Convention further states that this level should be “achieved within a time-frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner.”

As a first step toward this goal, and in accordance with the principle that the Parties should take action on the basis of their “common but differentiated” responsibilities and capacities, developed country Parties agreed to aim to stabilize their greenhouse gas emissions at 1990 levels by the year 2000. The Convention also called on these countries to provide “new and additional” financial resources, as well as access to new technologies, to developing countries, particularly those most vulnerable to the adverse effects of climate change.

The Convention also makes provision for a formal review of the adequacy of commitments at the first Conference of the Parties. In 1995, governments therefore examined the IPCC's *Second Assessment Report*, which included the consensus statement that “the balance of evidence suggests that there is a discernible human influence on global climate.”

Based largely on the IPCC's findings, the Parties concluded that the existing stabilization commitment was not adequate to meet the ultimate objective of the Convention. They further agreed to begin a process to negotiate new commitments for the post-2000 period, including the strengthening of emission reduction commitments by developed countries through the adoption of a protocol or other legal instrument. The negotiations that followed ultimately resulted in the Kyoto Protocol, signed at the Third Conference of the Parties in December 1997.

¹ Article 2, 1992 United Nations Framework Convention on Climate Change

Kyoto Protocol

The core elements of the Kyoto Protocol are consistent with the provisions of the Convention. For example, the Protocol is based on the key principles of the Convention, including the notion of common but differentiated commitments between developed and developing countries. Both instruments also call on the Parties to develop national programs to address climate change, carry out technology transfer and provide new and additional resources to developing countries, and promote and develop education and training programs.

Article 3 of the Kyoto Protocol commits developed countries to collectively reduce their emissions of six greenhouse gases by a total of 5.2 percent by the period 2008 to 2012. The Parties are required to make “demonstrable progress” toward achieving this commitment by 2005. The Parties may enhance their carbon sinks as part of their efforts to meet this commitment; however, this provision is currently limited to direct human-induced land-use change and forestry activities.

The entry into force of provisions of the Protocol stipulate that 55 Parties representing 55 percent of 1990 Annex I CO₂ emissions must ratify the Protocol before it comes into effect. This provision was meant to ensure that participating Parties would not be legally bound to fulfill the terms of the Protocol before their major trading partners did. At present, 84 countries have signed and 22 developing countries and small island states have ratified the Kyoto Protocol.

Kyoto Mechanisms

One of the most important aspects of the Kyoto Protocol from a Canadian perspective is the inclusion of three Kyoto mechanisms. These mechanisms were an intrinsic part of the final deal in Kyoto. In the final session, several countries, including the United States, Canada and Japan, secured acceptance of the mechanisms by self-imposing more stringent reduction commitments.

The primary function of these mechanisms is to assist Annex I Parties in achieving compliance with their commitments under the Protocol. These mechanisms include:

- **Joint Implementation**, which allows any Annex I Party to transfer to, or acquire from, any other such Party emission reduction units resulting from projects aimed at reducing greenhouse gas emissions at source or enhancing anthropogenic removals by sinks;
- **Clean Development Mechanism (CDM)**, which allows certified emission reductions resulting from sustainable development projects in developing countries to be funded by Annex I Parties to meet part of their Article 3 objectives; and
- **Emissions Trading**, which allows Annex I Parties to fulfill their obligations under Article 3 by buying and selling emission reduction credits.

While each of these mechanisms is designed to maximize the cost-effective implementation of the Protocol, there are significant differences between the three mechanisms. For example, the CDM is the only Kyoto mechanism that explicitly involves both developed and developing countries, and is the only one that generates tangible reduction units between 2000 and the first budget period of 2008–2012.

The further elaboration and design of all three of these mechanisms forms the core of the post-Kyoto international negotiating agenda. Key issues requiring resolution before the Protocol comes into force include:

- **Supplementarity**, which refers to the Protocol requirement that emissions trading and joint implementation shall be “supplemental to domestic actions;”
- **Liability**, which refers to how responsibility will be determined **and the form that remedies will take** if a seller fails to deliver on anticipated reductions;
- **Fungibility**, which refers to whether or not certified emission reductions from CDM projects and emission reduction units from joint implementation projects may be traded within the international emission trading system; and
- **The Participation of Legal Entities**, such as the private sector.

Each of these issues will need to be resolved before the mechanisms take effect. As the Protocol anticipates that the Parties will begin banking certified emission reductions from the CDM as early as this year, early resolution of CDM-related questions in particular is essential.

International Players and Negotiating Dynamics

The positions taken by particular blocs in the climate change negotiations differ significantly. This reflects significant differences in circumstances among the various nations and regions, including their basic geography, climate, and political and economic structures. Chief among these differences is the degree of national economic dependency on the extraction, production, or intensive use of fossil fuels. Equally important is how various countries address environmental issues, particularly how greatly they rely on regulatory, economic or voluntary measures.

Other factors influencing the positions taken by different Parties include their vulnerability to the effects of climate change, their relative contribution to global greenhouse gas emissions and the range of domestic opportunities available to them. For example, the United States was the greatest producer of CO₂ emissions, with 24 percent of energy-related global emissions in 1997, making its full participation in emission reduction activities essential to the ultimate success of the Convention.³

At the same time, however, developing country emissions are expected to rise exponentially in the next 20 to 30 years. The International Energy Agency estimates that energy-related CO₂ emissions from developing countries will rise from 5.9 billion tonnes

³ Source: International Energy Agency, 1998.

in 1990 to 13.5 billion tonnes in 2010.⁴ Developing country emissions are also expected to account for nearly 50 percent of global industrial CO₂ emissions by 2010, up from one third in 1996. China's emissions alone are expected to double by 2010.

These factors have contributed to the emergence of several negotiating blocs in the last decade. These blocs include:

- the **Alliance of Small Island States**, representing the interests of small, mostly island states, which are particularly vulnerable to the adverse effects of climate change, especially the rise in sea level;
- the **Group of 77 (G-77) and China**, representing developing countries that want to ensure that their economic and social development won't be hampered by efforts to address climate change;
- the **European Union (EU)**, which has traditionally advocated significant emission reduction targets, reflecting the fact that European economies generally rely far less than other OECD members do on industrial sectors (e.g., oil and gas) most affected by climate change abatement policies; and
- the **Umbrella Group**, which includes non-EU members of the OECD, as well as Russia and the Ukraine. This group acts as both a negotiating bloc and a potential emissions-trading bloc.

New potential alliances between countries will likely continue to emerge in the post-Kyoto period. For example, several South American countries, led by Argentina, have begun to demonstrate considerable interest in exploring how they can maximize their participation in the Kyoto mechanisms, thus increasing investment flows to their countries. As part of this exploration, Argentina announced in November 1998 that they intend to adopt a voluntary emission limitation commitment, which could give them preferential access to the mechanisms.

Key Issues in the International Negotiations

Several major issues have influenced international climate change negotiations since they started. One such area is often referred to as the "equity debate." It refers to the attribution of responsibility or the burden-sharing arrangement adopted by the Parties in reducing emissions. Developing countries advocate a formula based on historical contributions to atmospheric CO₂ concentrations, whereas developed countries have traditionally wished to see more universal efforts to reduce emissions.

In addition, ongoing negotiations are influenced by concerns about the potential impact of mitigation measures on the international trade and competitiveness of individual countries or regions. Some countries (including Australia, Canada and the United States) are concerned that the dearth of commitments by developing countries could undermine the international competitiveness of their domestic industries.

⁴ International Energy Agency, *Energy Environment Update*, No. 6, August 1997.

A related concern is that of “carbon leakage.” Leakage refers to emission increases in countries that have not adopted reduction commitments (i.e., developing countries), increases caused by the relocation of energy-intensive industries to these countries. This type of emission relocation could also occur if energy-intensive industries in developing countries expand output and emissions through a newly created comparative advantage.

The issue of developing country commitments remained contentious during the negotiation of the Kyoto Protocol. Based on both trade and competitiveness concerns, as well as the fact that emissions from developing countries are expected to grow exponentially over the next 20 years, several developed countries advocated for the Protocol to include a process to examine and negotiate non-Annex I emission limitations. The United States in particular, responding to pressure from the U.S. Senate, lobbied for “meaningful participation” by developing countries in the Protocol.

This issue was not resolved in Kyoto and remains the most divisive of all the issues in the Convention. It promises to be a major area of debate in future negotiations. The resolution of this question will be critical to the ultimate success of both the Convention and the Protocol.

Implementation Strategies

Annex I Parties have adopted significantly different approaches to implementing their commitments under the Convention. As indicated above, this reflects such factors as geographic circumstances, the structure of each country’s domestic economy (and associated international competitiveness considerations), and the existing regulatory regimes or policy preferences in play in each country.

Uncertainties remain with respect to the key provisions of the Protocol, including guidelines and modalities associated with the Kyoto mechanisms, as well as the extent to which carbon sink enhancements may be used by the Parties to fulfill their commitments. There are a number of Annex I countries who have adopted National Action Plans (such as France, Australia, Iceland, Italy, Netherlands, Norway) while Great Britain and Germany have proposed draft National Action Plan with a view to finalizing these plans in the coming year (for Germany, the draft proposal has been postponed until 2001). As the measures proposed so far through the National Action Plans are not yet fully implemented, these do not guarantee that countries will meet their targets without making greater use of the Kyoto Mechanisms than anticipated in their strategies.

It is likely that most Umbrella Group members intend to optimize their use of the Kyoto mechanisms in meeting their commitments. In addition, interest in using the mechanisms appears to be growing among EU member states, particularly the United Kingdom and Germany. Canada has expressed its intention to achieve the majority of its reduction through domestic actions.

Domestic approaches vary widely. Germany, for example, has focused its efforts to date on both regulatory initiatives and ecological tax reform. In contrast, Australia, with its energy-intensive economy, is focusing on voluntary partnership-based initiatives, supplemented by improved fuel efficiency and alternative fuels programs, as well as significant investments in enhanced carbon sequestration. The United States anticipates a strong role for domestic emissions trading and has also introduced a series of research and development activities and financial incentives.

The United Kingdom is among the few countries that are on track to meeting their target. Its draft National Action Plan is to be finalized by the end of 2000. It includes a climate change levy, a goal to increase renewables 10% in 2010, domestic emissions trading, improving the transport system, energy efficiency schemes for homes and a major public education and outreach campaign. France has announced its national plan in January 2000 proposing some 96 domestic measures which focus on a carbon tax, improving the transport system, afforestation and reforestation, and increasing the use of renewable energy.

Countries are already engaged in international projects. A survey of Activities Implemented Jointly (AIJ) projects already implemented by some of Canada's competitors reveals that the United States has 44 projects, Japan 37, the Netherlands has 26, Australia has 7 and Sweden has over 40 such projects. The first full year in Canada's CDM & JI Office has led Canada's first 4 AIJ project reviews, along with technical assistance on approximately 10 projects in different stages of development.

Canadian efforts to address climate change to date have been shaped by our national circumstances, including our geography and cold climate, as well as the energy-intensive and highly regional nature of our economy. Canada's actions to date emphasize voluntary approaches to reducing greenhouse gas emissions.

The Path Forward

Climate change is a long-term issue. Although the international community is working to reduce emissions and enhance carbon sinks by 2008 to 2012, addressing climate change will remain a challenge long after the first deadline. Future action will continue to be guided by the ultimate objectives of the Convention.

In the short term, several Kyoto Protocol issues will need to be resolved before the Protocol can take effect. Some of them were identified at the fourth Conference of the Parties and form the framework for international climate change negotiations leading up to the sixth Conference of the Parties (COP6) in November 2000. Key issues include the elaboration of the Kyoto mechanisms, the inclusion and calculation of carbon sinks under the Protocol, and the development of a compliance regime for the agreement.

A core element of the COP6 agenda relates to elaboration and implementation of the Kyoto mechanisms. In general, the primary objective for members of the Umbrella Group (including Canada) in post-Kyoto discussions is to ensure that the international

mechanisms are simply designed, attractive to the private sector and become operational as soon as possible. The Umbrella Group is also opposed to any limits on the use of these mechanisms.

The EU, supported by the G-77 and China, wants stringent requirements placed on the mechanisms to ensure that the mechanisms do not create “loopholes” in the Protocol. This reflects concerns about both the environmental effectiveness of the mechanisms and trade competitiveness. The EU has also stated its opposition to “hot air” trading⁵, and continues to call for conditions on the mechanisms, such as a proposal that the compliance regime for the Protocol as a whole be in place before the mechanisms take effect.

The inclusion and calculation of carbon sinks under the Protocol will also be subject to intense discussion and negotiation in the lead-up to COP6. The central challenge will be to establish eligibility criteria for sinks under the Protocol. For example, it will be necessary to determine whether agricultural soils and forestry management may be counted as sinks, as well as the extent to which they should be fully credited in the first commitment period. Even within traditional negotiating blocs like the G-77, countries remain divided on these questions.

The development of a compliance regime for the agreement will also be a key component on the international agenda. Compliance encompasses a broad spectrum of issues, including the rules that govern the conduct of the Parties, the technical assessment of a Party’s efforts to implement and report on its activities, legal assessment of non-compliance and the consequences associated with such a determination. The compliance regime is a key element of the overall legal framework for action on climate change. As such, it forms an important part of upcoming international negotiations, including those leading to COP6 and beyond.

While the question of developing country engagement is not formally part of the negotiations to COP6, it is nevertheless critical to the future evolution of the Protocol and the Convention. The United States has stated the need to secure “meaningful” participation by these countries in the Protocol prior to its ratification. Other countries, including Canada, have indicated the importance of developing countries taking on emission reduction commitments in the future. The exploration of so-called voluntary commitments by such countries as Argentina and Kazakhstan offers one possible solution to this question, although progress in elaborating these commitments has been slow.

⁵Hot air refers to emission credits derived when a Party assumes a target which is higher than its current emission projections (for example, Russia’s commitment to stabilize their emissions at 1990 levels by 2010, despite the fact that their 1995 emissions were 32 percent lower than these levels. These allowances could potentially be sold on the international trading market.

As a global issue, climate change requires effective and collaborative international responses. The international dimensions of the climate change debate inform Canada's domestic response, just as our national circumstances inform our strategies and positions in international negotiations. As a result, careful consideration of this international context is essential to the development of Canada's national implementation strategy on climate change.

The European Union, Japan, and many developing countries are pushing for ratification by 2002, which coincides with the 10th Anniversary of the Rio Conference which saw the negotiation of the UNFCCC.

As Canada's most important trading partner, the response of the United States to the climate change challenge will be particularly important. The actions - or non-actions - of the United States could have profound effects on Canada's international competitiveness. It is therefore essential that Canada's implementation strategy carefully consider the likelihood that the United States will ratify or implement the Protocol.

CANADA'S NATIONAL IMPLEMENTATION STRATEGY ON CLIMATE CHANGE

ANNEX 3

DOMESTIC CONTEXT FOR ACTION ON CLIMATE CHANGE

Several factors influence and inform the development of domestic responses to climate change. One is the science of climate change, which offers compelling projections that Canada and the rest of the world will be adversely affected by increased atmospheric concentrations of greenhouse gas emissions. This has provided a powerful rationale for both international and domestic action to mitigate and adapt to the potential impacts of climate change. International trade and competitiveness considerations also underline the importance of a global framework for actions to address climate change.

Canada's national circumstances also influence our response to climate change. These circumstances are not uniform throughout Canada, and may vary significantly from region to region. Understanding this variance is critical to the development and evolution of the national implementation strategy on climate change.

The purpose of this summary is to outline the Canadian context for addressing climate change. This includes Canada's national circumstances, as well as its greenhouse gas emissions profile. This document also provides an overview of action on climate change in Canada to date, and summarizes the key elements of the national implementation process established by the First Ministers in December 1997.

Canada's National Circumstances

Canada's national circumstances include our vulnerability as a northern country to the potential impacts of climate change. At the same time, Canada's climate of extremes of cold and hot weather, large land mass, relatively high population growth rate, and many resource-based energy-intensive industries all contribute to high energy use and demand, which in turn produces relatively high levels of greenhouse gas emissions.

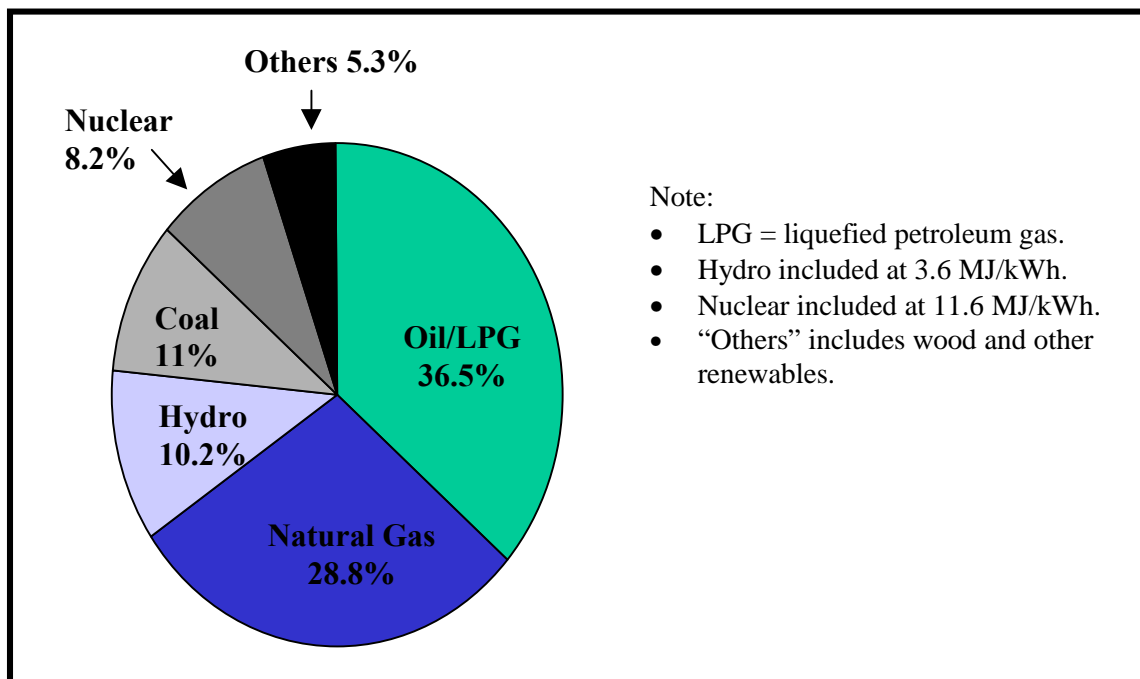
These factors underline the importance of a response strategy that incorporates both mitigation and adaptation measures. The strategy must also account for the uneven distribution of anticipated climate-related damages and mitigation costs among regions of the country and sectors of the economy.

The extent of projected economic growth in Canada is another facet of our domestic context. While Canadian industry has lessened its energy intensity in recent years, the growth in demand for products has overwhelmed associated emission reductions. Energy intensity reductions would have to continue at almost twice the current rate to keep up with this increase in the volume of production.

In addition, the Canadian economy includes a large proportion of energy-intensive commodity industries and relies heavily on international trade. Six energy-intensive industries — pulp and paper, iron and steel, smelting and refining, chemicals, petroleum refining, and cement — account for 60 percent of industrial energy demand.

Other sectors of the Canadian economy also use significant levels of energy. Much of this energy demand is for oil and liquefied petroleum gas (36.5 percent), followed by natural gas (28.8 percent).

Figure 3.1 Canadian Energy Demand by Fuel Type, 1997



(Source: Natural Resources Canada, 1999)

In addition, the Canadian economy is highly export-intensive. Exports currently comprise more than 40 percent of Canada’s GDP. On a sectoral basis, Canadian exports have diversified in recent years, and now include a larger portion of higher value-added products. However, 40 percent of Canada’s exports are still energy-intensive, resource-based commodities. How mitigative responses to climate change could affect Canada’s competitiveness is therefore an important consideration.

Canada is also heavily reliant on the United States as a trading partner. The U.S. share of Canadian exports grew from 71 percent in 1991 to 78 percent in 1997. Much of Canada’s export growth in the 1990s was fueled by American demand for Canadian products such as natural gas, which play an important and likely increasing role in helping the United States reduce its emissions. Given its role as Canada’s primary trading partner, the U.S. approach to addressing climate change is of particular importance to Canada’s national strategy.

At the same time, there are significant private opportunities and public benefits associated with actions to address climate change. For example, with annual sales of \$14 billion, Canada's environmental technologies industry is one of the fastest-growing sectors of the economy. Areas where Canada has particular strength include a range of energy efficiency technologies, the collection and use of landfill gas, and alternative power generation. These technologies also offer ancillary benefits, as they reduce pollutants such as nitrogen oxides (NO_x) and particulate matter.

Canada has significant geological potential for carbon dioxide (CO₂) sequestration, both in aquifers and in enhanced oil recovery in the Western Sedimentary Basin. In addition, Canada's forests and soils act as valuable carbon sinks and may offer additional opportunities for carbon sequestration. Although questions remain regarding the eligibility and measurement of sinks under the Kyoto Protocol, this is nevertheless an area of potential strength for Canada.

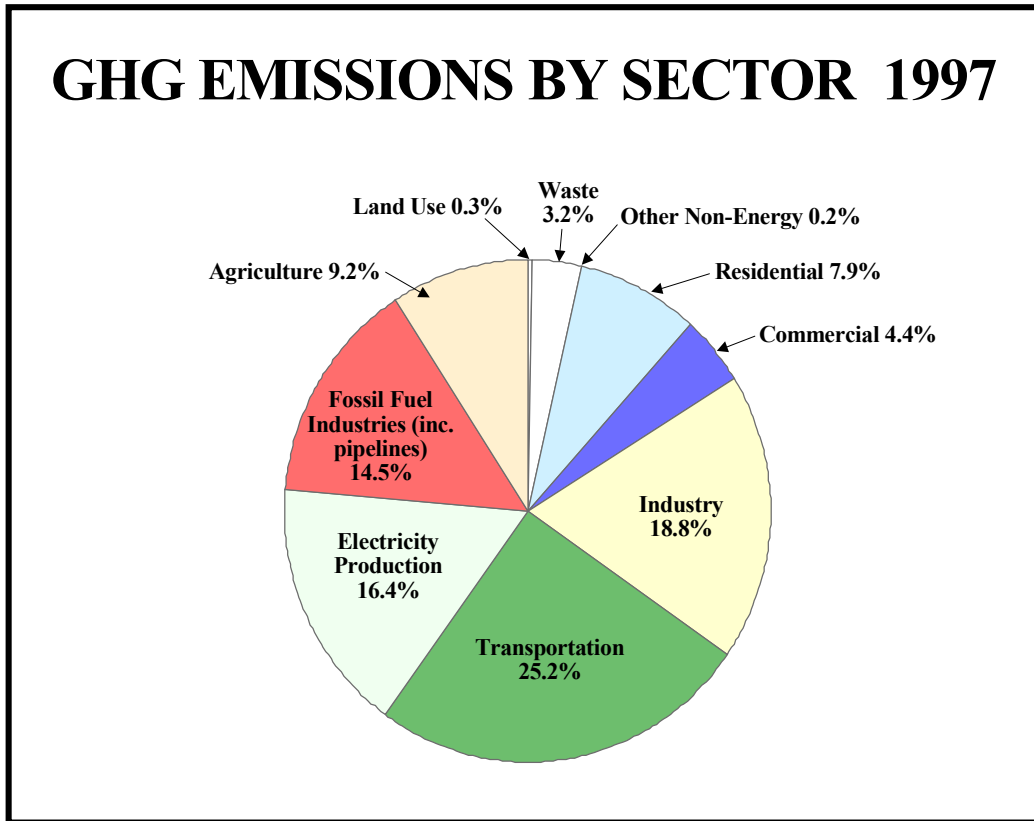
Emissions Profile

Canada's total greenhouse gas emissions in 1997 were 682 million tonnes (or about 2 percent of global emissions). Of the six greenhouse gases covered by the Kyoto Protocol, CO₂ was the greatest contributor to Canada's total emissions in 1997, representing 76 percent of total emissions.

Energy production, transmission and use are the largest sources of greenhouse gas emissions in Canada. Energy-related emissions account for approximately 79 percent of total emissions. This total includes all fossil fuel combustion activities, including electricity generation, industrial processes and transport.

On a sectoral basis, transportation was the top contributor to greenhouse gas emissions in 1997, accounting for approximately 25 percent of Canada's total. Other key sectors included the industrial sector (19 percent), electricity generation (16 percent), fossil fuel production and distribution (15 percent), residential heating (8 percent), agricultural (9 percent), and commercial and institutional sectors (4 percent).

Figure 3.2: Canada's Greenhouse Gas Emissions by Sector (1997)



(Source: Trends in Canada's Greenhouse Gas Emissions 1990-1997. Environment Canada, 1999.)

Individual Canadians, through personal transportation, home heating and electrical use, are directly responsible for about 28 percent of Canada's total emissions. This proportion is even higher if emissions from the manufacture of consumer products are included. Clearly, actions to reduce greenhouse gas emissions must involve all Canadians — as individuals, in their communities, and within governments and industry.

Emission Trends Since 1990

Canada's emissions in 1997 were 13 percent higher than 1990 levels. This is primarily a reflection of three factors: increased economic activity, population growth, and increased energy exports and consumption. Among the provinces, emissions rose most quickly during this period in Alberta, followed by British Columbia. Emissions growth in these two provinces was led by increased oil and gas production in Alberta, and transportation-related emissions in British Columbia.

In 1997, more than 50 percent of Canada's oil and natural gas production was exported to the United States. Canadian exports of oil and natural gas from 1990 to 1997 were responsible for 26 percent of Canada's total emissions growth. While advances in energy efficiency slowed the rate of emissions growth during this period, the increases in

production overwhelmed efforts to limit associated emissions. Several unforeseen circumstances also increased emissions during this period, such as the temporary shutdown of some nuclear reactors in Ontario in 1995.

Different sectors have experienced different levels of emissions growth since 1990, and this growth has been spurred by various factors. For example, transportation-related emissions increased by 17 percent from 1990 to 1997 because more vehicles were being driven greater distances. Since the late 1980s, improvements in the energy efficiency of personal vehicles in North America have been used mainly to increase power and weight rather than to reduce fuel consumption¹. In addition, truck traffic has increased substantially because of NAFTA trading and the needs of minimum warehousing practices in industry. As a result, less emissive trains now carry lower proportions of freight traffic².

On the other hand, the energy intensity of secondary energy use in Canada has significantly improved since 1990³. While CO₂ emissions from secondary energy use increased by 7.2 percent between 1990 and 1996, they did so at a lower rate than initially projected because of increased energy efficiency in each end-use sector. In the absence of these improvements, CO₂ emissions would have risen by 11.4 percent during this period (or another 16.3 megatonnes)⁴.

Projected Greenhouse Gas Emissions in Canada

To account for any events or circumstances that might influence Canada's future emissions profile, Natural Resources Canada produced updated projections of Canada's greenhouse gas emissions in December 1999 in cooperation with the Analysis and Modelling Group established under the national climate change process. This report can be found on the Internet at <http://www.nrcan.gc.ca/es/ceo/update.htm>.

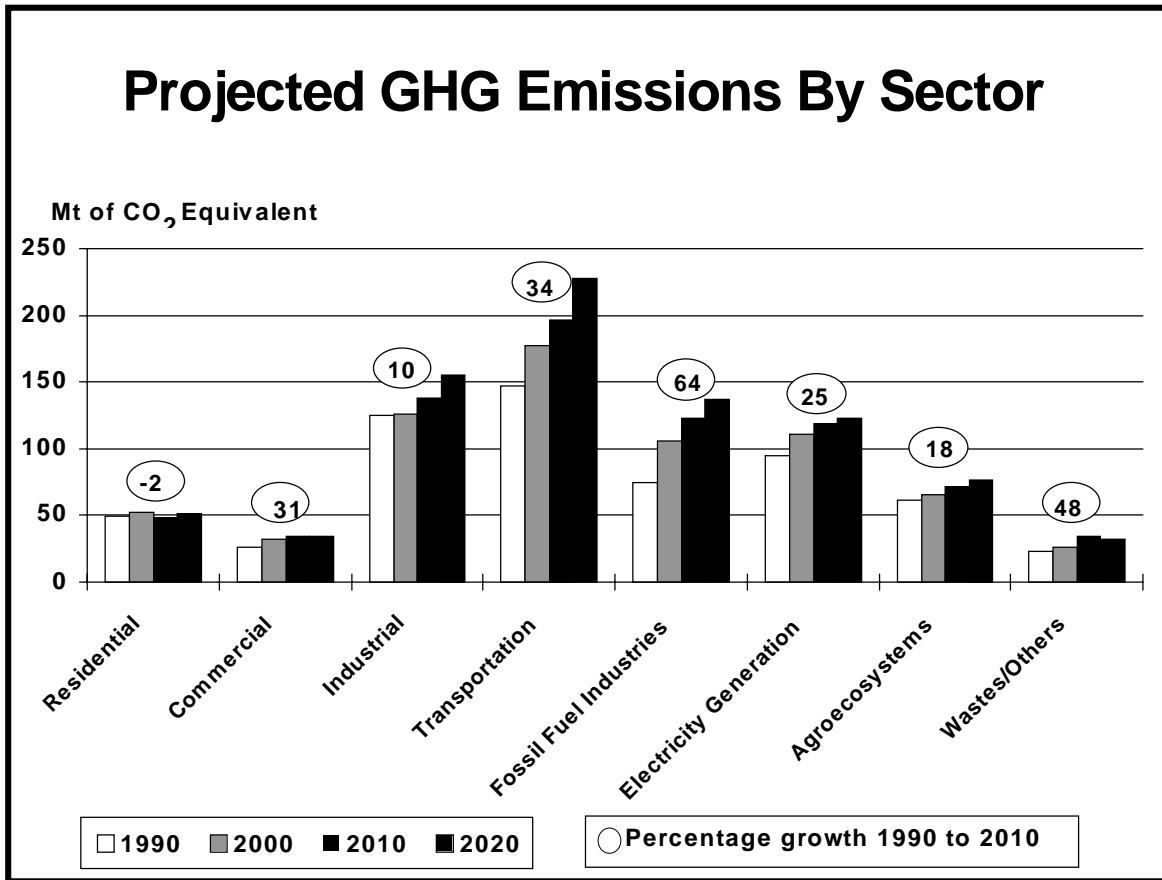
¹ Transportation and Air Quality, U.N. National Academy of Science and Royal Society of Canada, 1998.

² Ontario Round Table on Transportation and Climate Change, 1995.

³ Secondary energy use refers to energy used in the transportation, industrial, residential, commercial and agricultural sectors (also known as end-use sectors).

⁴ See Natural Resources Canada, *Energy Efficiency Trends in Canada 1990–1996: A Review of Indicators of Energy Use, Energy Efficiency and Emissions*, June 1998. This publication can be found at http://oee.nrcan.gc.ca/general/trends/trends_e.pdf. Other publications related to energy efficiency in Canada can be found on the NRCan Office of Energy Efficiency Web site at <http://www.oee.nrcan.gc.ca>.

Figure 3.3: Projected Business-as-Usual GHG Emissions Growth by Sector to 2010



(Source: Analysis and Modelling Group, Canada's Emissions Outlook: An Update, December 1999)

The update assumes stronger economic growth in the short term, although longer-term economic projections (2000 to 2010) are expected to remain largely the same as earlier projections. All provinces except British Columbia are expected to experience strong short-term economic growth (i.e., from 2000) from resource-based industries (in the Atlantic), higher U.S. export growth (Quebec and Ontario), and higher growth in consumer and service sectors (Alberta, Manitoba and Saskatchewan). Growth in Alberta would also be driven by anticipated oil sands developments.

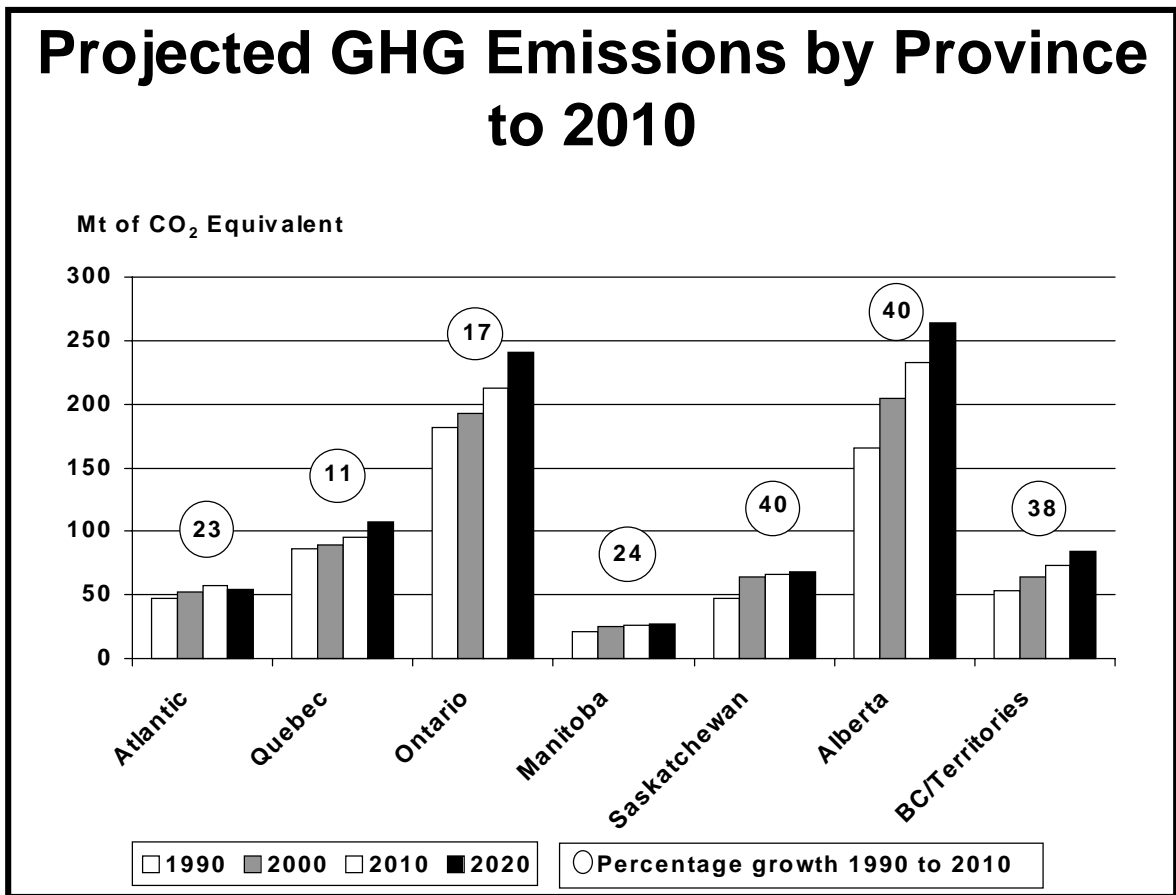
This projected economic growth is expected to result in increased estimates of emissions by 2010. According to the update, total greenhouse gas emissions are estimated to be 27 percent above 1990 levels by 2010. By 2020, if no further action is taken, emissions are expected to rise 41 percent above 1990 levels.

The most significant contributor to emissions growth is expected to be the fossil fuel industry, which is projected to increase its emissions by 64 percent between 1990 and 2010. This is largely because of increases in oil sands production to meet export demand, scheduled to occur between 2000 and 2010. Transportation-related emissions are

expected to grow by 34 percent during this period, driven by increases in air and road transport of freight and passengers.

Emission growth rates do, however, differ markedly across the country. Emissions are expected to grow most quickly in Alberta, Saskatchewan and Newfoundland (40 percent by 2010). British Columbia and New Brunswick are also projected to experience strong emissions growth, by 38 percent and 30 percent respectively. Emissions in Ontario and Quebec are expected to grow at lower rates, 17 percent and 11 percent respectively. The largest emitters by tonne are Alberta and Ontario.

Figure 3.4: Projected Business-as-Usual GHG Emissions Growth by Province to 2010



(Source: Analysis and Modelling Group, Canada's Emissions Outlook: An Update, December 1999)

Actions to Date

The development of the current national implementation strategy builds on previous steps by federal, provincial and territorial governments. The 1995 National Action Program on Climate Change (NAPCC) established the Voluntary Challenge and Registry Inc. (VCR Inc.) to encourage private and public organizations to voluntarily limit their net greenhouse gas emissions. The VCR Inc., and its Quebec counterpart, ÉcoGEsté,

complement the Canadian Industry Program for Energy Conservation (CIPEC), which was established in 1975 to promote reduced energy consumption per unit of production in all Canadian industrial sectors. CIPEC has been instrumental in reducing the energy intensity of key industrial sectors in Canada.

Many governments in Canada - including municipalities - have undertaken significant initiatives to reduce emissions from their own operations. Actions by governments include energy efficiency improvements, the promotion of renewable energy and alternative energy, and the development and commercialization of climate-related technologies. All governments are also exploring options for reducing emissions from the transportation, residential, commercial and industrial sectors. A list of actions by governments to date can be found at

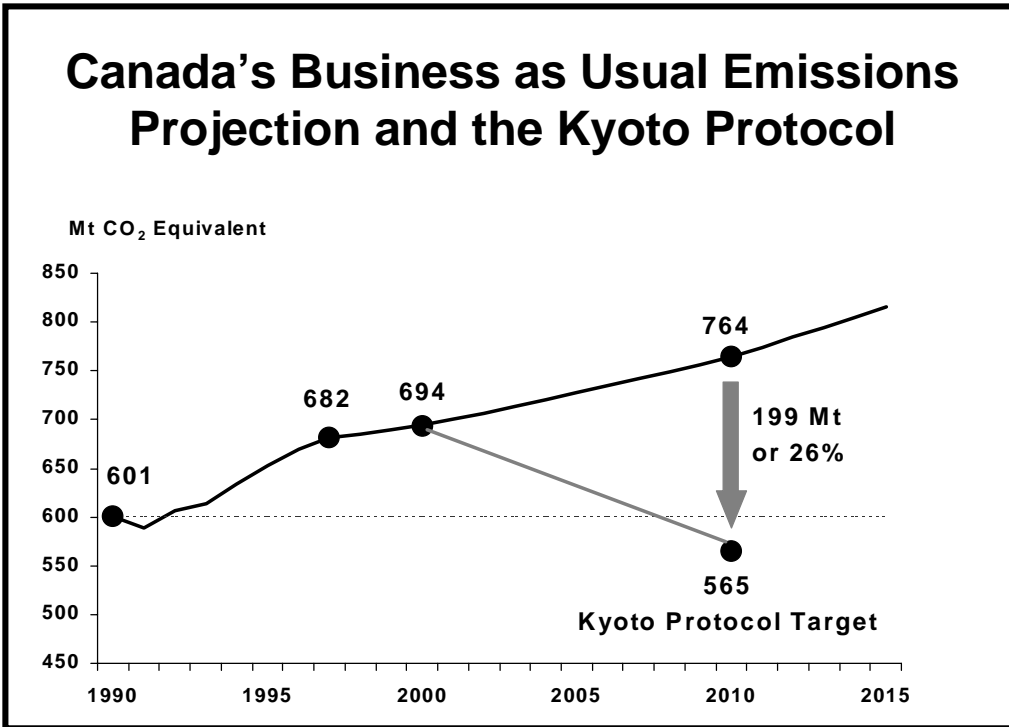
http://www.nrcan.gc.ca/communications/cc2000/html/actions_to_date.html.

Impact of Current Actions

Natural Resources Canada's December 1999 projection now estimates emissions in 2010 to be 27 percent above 1990 levels. However, NRCan also estimates that, in the absence of the NAPCC, emissions projections would be much higher – in the order 8 percent above 1990 levels in 2010, and 11 percent higher in 2020.

Canada's emission reduction commitment under the Kyoto Protocol is 6 percent below 1990 levels within the 2008–2012 period. This means that Canada's emissions limit for 2008–2012 is 565 megatonnes (Mt). To achieve this target, emissions need to be reduced by 199 Mt. This represents a gap of 26 percent between the updated projections and the Kyoto target. This will be a considerable challenge for Canada.

Figure 3.5: Estimated Emission Reductions Required to Meet Kyoto Target



(Source: Analysis and Modelling Group, *Canada's Emissions Outlook: An Update*, December 1999)

While this gap is significant, these projections are lower than they would have been in the absence of current initiatives. The update estimates that, without the NAPCC, the Kyoto gap would be about 30 percent higher.

Furthermore, the potential for replicating existing measures is significant. The Climate Change Action Fund, administered by the federal government, will also help engage industry, environmental groups and the public in additional activities to reduce emissions.

National Process on Climate Change

The First Ministers discussed the issue of climate change immediately after the conclusion of the Kyoto Protocol in December 1997. They agreed that climate change is an important global issue that Canada must do its part to address, although this must be done without asking any region to bear an unreasonable burden. As a result, the energy and environment ministers agreed in April 1998 to engage governments and stakeholders in a process to develop a phased national implementation strategy.

Sixteen multi-stakeholders Issue Tables were established to provide advice to governments and enable stakeholder involvement in the development of the strategy. These Tables were given a mandate to develop options for reducing greenhouse gas emissions in different sectors, as well as to provide advice on cross-cutting issues such as public education and outreach.

In March 2000, federal, provincial and territorial ministers of energy and the environment agreed on the need for coordinated action on climate change within a national framework, while recognizing jurisdictional flexibility to meet unique regional needs, circumstances and opportunities. The ministers agreed that the national implementation strategy should both undertake immediate actions and provide ongoing analysis and decision-making on opportunities and challenges under the Kyoto Protocol.

A three-year rolling business plan approach was adopted by the ministers to implement the national implementation strategy. The ministers will meet in fall 2000 to consider an integrated package, including the national implementation strategy, a Phase One business plan, and a federal, provincial and territorial framework agreement. Themes for the Phase One business plan will include enhancing awareness and understanding, promoting technology development and innovation, investing in knowledge, governments leading by example, and encouraging action within and across all sectors.

Clearly, the challenge for Canada is considerable. Canada must develop a risk-management approach that adequately accounts for Canada's vulnerability to climate change, economic well-being and growth, and significant regional differences. At the same time, the approach must recognize and enhance the opportunities for Canada associated with efforts to address climate change. For example, overall competitiveness can be enhanced by increased efficiencies in the use of energy and in industrial processes.

The approach agreed to by the ministers in March 2000 provides a framework for the further elaboration of this strategy in the coming years. Continued understanding of Canada's changing domestic circumstances will be key to the development of this approach.