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Managing the impact of a tourism-driven increase in greenhouse gas emissions on BC's aviation and tourism sectors

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Issue

Greenhouse gas (GHG) emissions from aviation in British Columbia (BC) are expected to increase in the foreseeable future, in part driven by growing tourism to the province. Yet current projections do not account for, or acknowledge the possibility of, increased emissions due to tourism growth. Existing international protocols specify that international flight emissions are not to be included in the emissions inventory of a country, or in this case, the Province of BC. However, flights between Vancouver and overseas destinations produce a significant amount of GHGs during take-off and landing over Canadian territory and before entering international airspace. Emission ownership in regards to international flights must be addressed in the province's GHG inventory if emissions are to be presented to the aviation and tourism sectors as a manageable risk. The European Union (EU) recognises the risk and this year intends to regulate emissions for the entire journey, regardless of airspace. BC has set ambitious emission reduction targets, and so will face a number of important decisions in regard to how aviation emissions related to these lucrative industries should be managed.

Background

Total GHG emissions in BC grew 20% between 1990 and 2009, from 56 Mt CO₂e to 67 Mt CO₂e. While aviation currently contributes only 2.2% to the overall BC GHG emission inventory, this is expected to change as tourism to the province increases.ⁱ The International Air Transport Association (IATA) recently forecasted that there will be 3.3 billion air travellers annually by 2014, up from 2.5 billion in 2009.ⁱⁱ China is anticipated to be the biggest contributor with 214 million new travellers, 181 million of whom are expected to embark on domestic trips and 33 million on international trips.ⁱⁱⁱ This makes China the fastest growing market for international passenger traffic with an increase in growth of 11% (about double the compound annual growth rate of 5.9%), and means that by 2014, China will be the largest international and domestic market in Asia.^{iv}

The Asia/Pacific market is already the largest source of overseas visitors to BC (17% of international visitors in 2008), even larger than the significant number of tourists who originate in Europe (14% of international visitors in 2008).^v Since obtaining Approved Destination Status (ADS),^{vi} Canada has become a highly popular destination with Chinese tourists, ranking as high as third in terms of the most desired destinations for prospective visitors from that country.^{vii} There are currently 51 weekly return flights between Vancouver and Beijing, Hong Kong and Shanghai^{viii} but this number is likely to grow under the ADS Program given that Vancouver serves as a gateway for popular tourist destinations such as Whistler and the Rocky Mountains, and as the Chinese expatriate population grows in the province. Expansion of service will result in increased GHG emissions from aviation (and more broadly the tourism sector) in BC.

This year the EU began environmental restrictions when it included emissions from the international aviation sector within the cap of its emissions trading system, the EU ETS. The airline industry would prefer to see its emissions regulated by the International Civil Aviation Organization (ICAO), a body of the United Nations. However, in 1997 the ICAO was tasked with creating a global plan to tackle the aviation sector's carbon footprint and has made little progress in 14 years. This inaction subsequently brought about the sector's inclusion in the EU regulatory system. The EU is taking the role of 'first enforcer', and [has recently announced](#) that it will recognize equivalent emissions reduction measures taken by other jurisdictions within its own system. If these steps are to be the benchmark for future global regulation as is expected, (similar action is also taking place in the shipping industry) then it would be beneficial to the aviation and tourism sectors in BC for regulators to closely monitor the development of the EU ETS rules when determining the most appropriate course of action.

Recommendations

Three factors should be considered in addressing a tourism-driven increase in GHGs from the aviation sector:

1. Measurement and reporting:

Accurate measurement of emissions from the aviation sector should be a priority and at the very least be captured as a memo item in the province's GHG inventory. Future emissions reporting and inventory projections should acknowledge the likelihood of increased emissions due to an influx of tourists from countries such as China, especially since BC is actively encouraging growth of this market.

2. Level of action:

Imposition of carbon emissions charges under the EU ETS has proven problematic since it applies to both EU and non-EU carriers and for the entire duration of the flight. While the courts have ruled in favour of the EU ETS, it is still being boycotted by many countries, including China, which is going so far as to effectively prohibit its airlines from participating in the ETS.^{ix} This negotiation is ongoing. Despite the lack of international resolution, it is necessary to consider the impact of imposing BC-only emissions charges for flights across provincial boundaries, as these could negatively affect the aviation and tourism industries in the province. Emissions could be shifted into bordering states such as Alberta or Washington if comparable policies are not established in those jurisdictions. Coordinated policy implementation on a Canadian or North American scale should be pursued as this would obviate evasion of regulations or emissions pricing.

3. Mechanisms for action:

Encourage voluntary action

Despite significant opposition to emission reduction programs, there have been successes. In Japan, the two largest airlines (Japan Airlines and All Nippon Airways) have engaged in a voluntary emissions reduction program since 1990, resulting in a 15% reduction in CO₂ intensity from 1995 to 2010 benchmarked with 2004 traffic demand levels.^x Increased outreach to airlines and cooperation with the government may enable such programs to be implemented in Canada, and could the use of more efficient fuels and more efficient control of air traffic.

Inclusion under the carbon tax

The fuel used by airlines for international flights is not currently subject to the BC Carbon Tax.^{xi} Fuel purchased in British Columbia by commercial air services for use on routes that originate in BC without stopping elsewhere in the province is not subject to the BC Carbon Tax.^{xii} Including such fuel purchases under this tax could encourage operators to reduce their emissions. If the cost is passed on to passengers, however, the valuable tourism sector could be adversely affected. The pricing structure of Canadian aviation and airports is already considered uncompetitive internationally,^{xiii} meaning that any further charges or taxation on BC aviation may induce airlines to fly to Alberta or Washington State instead. This would not only negatively affect the BC economy but also simply shift the emissions problem to a different jurisdiction. It would thus be unwise for the Provincial Government to unilaterally implement such a measure. Alternative measures need to be found to reduce, or at least control, the growth of BC aviation emissions.

Purchase offsets through the Pacific Carbon Trust (PCT)

The Pacific Carbon Trust (PCT) provides transparent, effective carbon offsets. The Provincial Government could utilize the PCT to encourage greater conformity and transparency on the voluntary carbon offset market. Two small BC airlines—Westcoast Air/Harbour Air (merged) and Helijet—are carbon neutral through the use of offsets, and Air Canada and its subsidiary Air Canada Express offer passengers the option to purchase offsets. Westcoast Air/Harbour Air and Helijet could serve as a template that illustrates how airlines can achieve carbon reductions while remaining economically competitive.

Inclusion in the Western Climate Initiative (WCI) cap and trade program

The WCI emission cap and trade system is scheduled to include emissions from transportation fuels in 2015,^{xiv} when aviation emissions could be included. This may prove to be a workable compromise between the aviation and tourism sectors as the WCI system is intended to provide low-cost emission reductions while mitigating economic impacts.^{xv} Further, it may be beneficial to consider assigning the bulk of the revenue generated from the sectoral allowance allocation towards developing efficiency solutions, thereby simultaneously encouraging the local clean technology industry and broader economy in BC.

Conclusion

International aviation emissions are growing fast, and have increased by 42% between 1990 and 2005. Increasing tourism from rapidly growing markets such as China is a welcome contributor to BC's economy but comes with an environmental cost. Political and socio-economic developments in China, combined with BC's status as a popular tourist destination

and Vancouver as a favoured port of entry, indicate that Canada-bound tourism will grow significantly in the future, which in turn will contribute emissions to BC's GHG inventory. At some point, regulators in the province will be required to account for this emerging issue. Early proactive attention will likely eliminate the need to take more drastic and economically damaging action in the future.

Further Reading

Top European court rules against North American carriers in fee dispute.

<http://www.theglobeandmail.com/report-on-business/international-news/top-eu-court-upholds-carbon-airline-law/article2279479/>

European Commission Climate Action. "Emissions Trading System (EU ETS)."

http://ec.europa.eu/clima/policies/ets/index_en.htm

European Federation for Transport and Environment. 2008. Including Aviation in the EU's Emissions Trading Scheme (EU ETS). Available from

www.transportenvironment.org/Publications/prep_hand_out/lid:480

EU carbon law could boost US airline profits - study

<http://www.reuters.com/article/2012/01/10/uk-eu-airlines-emissions-idUSLNE80904820120110>

Reals, Kerry. 2011. "EU ETS to cost airlines €1.4b in 2012: Point Carbon."

<http://beta.flightglobal.com/news/articles/eu-ets-to-cost-airlines-14b-in-2012-point-carbon-354073/>

Sources

ⁱ Dykins, Philip. The Environmental Dimension of Aviation Policy. Available from http://ec.europa.eu/transport/air/events/doc/eu_africa/session_4_united_kingdom.pdf. United Kingdom Department for Transport.

ⁱⁱ IATA. 2011. "Industry Expects 800 Million More Travelers by 2014 - China Biggest Contributor." Accessed February 16 2011. <http://www.iata.org/pressroom/pr/Pages/2011-02-14-02.aspx>.

ⁱⁱⁱ Ibid.

^{iv} Ibid.

^v Tourism British Columbia. 2009. The Value of Tourism in British Columbia: Trends from 1998 to 2008. Available at http://www.jti.gov.bc.ca/research/IndustryPerformance/pdfs/tourism_indicators/Value_of_Tourism_in_British_Columbia.pdf.

^{vi} Government of Canada. 2010. "Approved Destination Status (ADS)." Accessed 16 February 2011. http://www.canadainternational.gc.ca/china-chine/visas/ads-sda.aspx?lang=eng&menu_id=193.

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- ^{vii} China Travel Trends. 2010. "Canada high on list for Chinese planning to travel, invest abroad." Accessed 16 February 2010. <http://www.chinatraveltrends.com/2010/07/canada-high-on-list-for-chinese-planning-to-travel-invest-abroad/>.
- ^{viii} Vancouver International Airport. 2011. "Airlines at YVR & Destinations." Accessed 16 February 2011. <http://www.yvr.ca/en/flight-information/destinations.aspx>.
- ^{ix} New York Times, 2012. "EU Rebuffs China's Challenge to Airline Emission System." Accessed 6 February 2012. <http://www.nytimes.com/2012/02/07/business/global/eu-rebuffs-chinas-challenge-to-pollution-plan.html?emc=eta1>.
- ^x Yamaguchi, Katsuhiko. 2010. "Voluntary CO2 emissions reduction scheme: Analysis of airline voluntary plan in Japan." *Transportation Research Part D* 15 46-50.
- ^{xi} ICAO. n.d. "Environment Section: Aircraft Engine Emissions." Accessed 11 October 2009. <http://www.icao.int/icao/en/env/ae.htm>.
- ^{xii} Ministry of Small Business and Revenue. 2008. "British Columbia Carbon Tax." Accessed 19 May 2011. http://www.rev.gov.bc.ca/documents_library/notices/British_Columbia_Carbon_Tax.pdf.
- ^{xiii} McCaig, David. "Major airport inequities making us uncompetitive." Accessed 11 May 2011. http://www.acta.ca/?page=Airport_inequities.
- ^{xiv} Western Climate Initiative. "The WCI Cap & Trade Program." Accessed 26 July 2011. <http://www.westernclimateinitiative.org/the-wci-cap-and-trade-program>.
- ^{xv} Ibid.