The Association of Environmental Justice in Israel (AEJI)
المنظمة للعدل البيئي האגודה לצדק סביבתי בישראל

Climate Justice and Economic Policy - Report No. 1

Social Prism Analysis of Greenhouse Gas Mitigation Policies and Recommendations for Advancing Climate Justice in Israel

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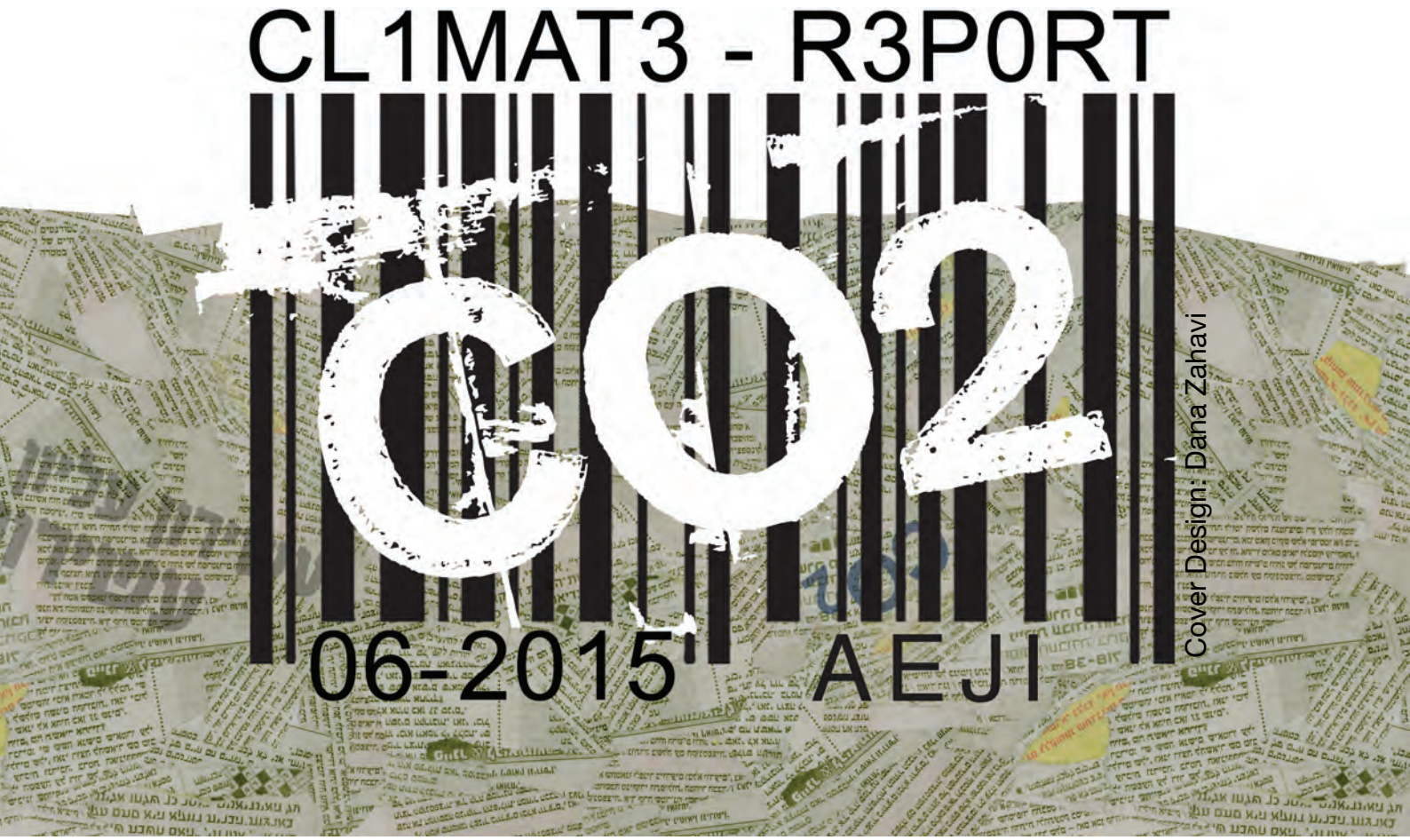
English Editor: Sagit Porat



Cover Design: Dana Zahavi

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The Climate Justice Research and Policy project is supported by Rosa Luxemburg Stiftung The content of this report is the sole responsibility of AEJI and doesn't necessarily reflects the position of RLS

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English Edition Introduction:

This document was originally published in Hebrew in August 2012 and submitted to the Israeli Government Steering Committee, which was mandated Israel to formulate a national policy for climate change and GHG mitigation. The committee was established in as part of government resolution 1504 (14.3.2010)[1], targeting a GHG emissions reduction rate of 20% of the total emissions expected in 2020, according to 'business as usual' scenario. The committee examined the economic impact of the reduction of GHG on the Israeli Economy, and was asked to propose the most efficient policy tools that would ensure the goal was met. This study refers to the national plan prepared by the steering committee, headed by the Director General of the Israel Treasure Ministry. In May 2013 a three-year hold was put on the implementation of the national GHG reduction plan due to budget cuts. The plan was to resume in 2016 with an expected completion by 2023.

This paper has been republished in English in 2015, and includes with the most up to date information following the government freeze of the national GHG Emission reduction plan.

[1] http://www.pmo.gov.il/secretary/govdecisions/2010/pages/des1504.aspx

Chapter 1: Presentation of the Research

Introduction

The summer of 2011 saw one of the largest social protests in Israeli history. The protest movement had started because of escalating housing prices, but soon extended to address a variety of social issues, ranging from kindergarten fees to determining governmental budget priorities. For many years the main discourse of both the public and decision-makers have dealt primarily with security issues, whereas today it seems that social-economic issues have become pivotal on the public-political agenda.

Some consequences of the protest were immediately apparent on the ground; the government had established the Trajtenberg Committee[2] and ratified some of its recommendations. The committee defined 'social justice' by three factors: compatibility between the contribution and effort invested by individuals to the compensation they receive; fair play including equal opportunities; and social support for individuals who fall on hard times (The Committee for Social Economic Change, 2011: 32). The aforementioned are similar to the definitions of 'climate justice' as considered by this report, namely, to advance effective greenhouse gas mitigation policies, while ensuring equal distribution of the burden without exacerbation of inequalities; and while ensuring that the policy does no harm, in particular to low income deciles.

According to the Gini coefficient (or Gini index), inequality in Israel, after taxes and transfer payments, has been constantly increasing and is presently higher than other OECD countries, with the exception of Chile, Turkey, Mexico, and the United States[3]. The extent of poverty in Israel after taxes and transfer payments is higher than all other OECD countries except Mexico[4]. This data further emphasizes that it is of great

[2] *The Trajtenberg Committee* is a commission appointed by Israeli Prime Minister Netanyahu in August 2011, in order to examine and propose solutions to Israel's socioeconomic problems, following that summer's social protests. The committee was headed by Prof. Manuel Trajtenberg, Chair of the Council for Higher Education's Planning and Budget Committee (PBC).

[3] OECD Stat – Income distribution – Inequality: Gini Coefficient (After taxes and transfers), total population, 2011.

[4] OECD Stat – Income distribution – Poverty: Poverty Rates after Taxes and Transfers, 50% of the current median income, 2011.

importance for greenhouse gas (GHG) mitigation policies to refrain from further enhancing inequality and poverty rates.

This first Climate Justice and Economic Policy Report is a summation of a study executed by the Association of Environmental Justice in Israel, in cooperation with the Institute for Social Research at Tel Aviv University. The study uses tools from the socioeconomic field to examine and analyze recommendations, which are being formed in Israel, for the promotion of GHG emissions mitigation policies[5]. The full study includes a broad review of the theoretical background and an analysis of trends and climate policy tools from around the world. It addresses claims made in international policy forums, according to which the continued disregard of inequalities in many consumer sectors, including fuels, constitutes a major barrier in processes striving for international agreement on greenhouse gas emission mitigation, and their consequent implementation.

The research indicates that the vast majority of recommendations proposed for Israel's climate policy address only environmental aspects and economic consequences, while disregarding any social impacts.

Methodology

The research studied the impact of climate policies on social justice in Israel, based on two main questions:

1. Do GHG mitigation plans in Israel lead to an increase or a decrease of disparities between socioeconomic deciles in Israel?
2. What impact do the measures for GHG mitigation have on poverty and vulnerable population groups in the country? This section also explores the situation with respect to disparities between geographical regions in Israel.

The study analyzed the main recommendations featured in consultancy reports by Heifetz & Co. and DHV MED, commissioned by the Ministry of Environmental

[5] The final study will be published in full in frame of the Climate Justice project, as a proposal for the government on "Climate and social economy policy", towards UNFCCC Paris in 2015.

Protection, and the study commissioned from McKinsey & Company by a government decision[6]; the official greenhouse gas emissions mitigation plan; as well as other activities by state agencies to mitigate emissions identified by five main sectors: electricity, building, transportation, fuels and waste[7].

The analysis of suggested recommendations and measures was performed as follows:

A. Assorted greenhouse gas mitigation measures as proposed by various bodies were assembled.

B. Main activities executed to date are presented, including an evaluation concerning the level of certainty with regard to the execution of next stages. The degree of certainty is presented on a scale between 1 and 5, in which 1 represents a very abstract measure, the implementation of which cannot be properly assessed, and 5 represents a measure already being implemented, the impact of which can be more accurately assessed.

C. An analysis examining the social impact of each measure. A measure is considered negative in social terms if it increases social disparities (in terms of status or geography) or if it is particularly harmful to vulnerable populations.

The measures are rated for current plans on a spectrum between (-2) – (+2), as follows: A measure with prominent negative social impacts (-2); a measure that tends to be negative (-1); a measure with no social impact, contradictory impacts or neutral (0); a measure that tends to be positive (+1); or a measure with significant positive social effects (+2). Since all measures are environmentally valuable, the measures that also carry positive social impacts can be defined as measures that promote climate justice.

The report focuses on short- to mid-term impacts of each measure. Although many environmental measures are beneficial in the long run, focusing on the long term is problematic both because it is accompanied by considerable uncertainty, and because socially lower deciles are economically less able to wait for improvement in the distant

[6] Government Decision No. 250 – Ministerial Committee on Environmental Protection and Climate Change, 24.5.2009.

[7] Food – we have refrained from analyzing the food market, since thus far the various reports and recommendations barely addressed the issue. However, it is important to note that a new study indicates that the rate of emissions in the food sector is substantial, and that varying emission patterns are identifiable by deciles. It is therefore definitely advisable in the future to suggest concrete measures to promote climate justice in this industry as well (The research on GHG emissions from food will be published on 2015).

future. Likewise, it is also important to note that we have examined each of the measures individually, based on assumptions concerning their financing and how they might impact different population groups. Evidently, should these measures be accompanied by additional tools when implemented, such as compensation for affected and/or vulnerable populations, their impacts might be quite different.

Chapter 2:

Review of Measures and Their Expected Social Impacts

in Electricity, Transportation, Construction, Fuel and Waste

1. Electricity

Most greenhouse gas emissions are concentrated in the electricity sector. There are two main leverages through which emissions in this sector could be mitigated: the generation of electricity based on cleaner sources and/or generation of less electricity by promoting energy efficiency measures.

Increasing Use of Renewable Energies

Despite numerous decisions made with regard to the issue, the share of renewable energy generation in Israel is very small, and only recently it had started growing at a faster rate. In 2009, only 0.12% of all electricity was generated from renewable energy sources; in 2010 renewables supplied 0.23% of the electricity; and in 2011, the rate grew to 0.41 % (Ronen 2012a).

Renewable energies are still more expensive than the production of energy using fossil fuels. As long as the government does not intervene in the market, increased use of renewable energy is expected to lead to higher electricity prices, thus primarily harming vulnerable populations. However, it should be noted that the generation of renewable energies can have positive effects on the periphery, mostly since solar energy production is concentrated there. Additionally, renewable energy generation is usually more decentralized, and we therefore maintain that the installation of solar panels on roofs guarantees that returns on investments for electricity generation would be distributed among many residents, rather than between the wealthy few[8].

It should likewise be considered that, as a result of technological innovations, renewable energy prices are declining. The drop in prices of solar panels in 2011-2012 is clearly bringing Israel closer to grid parity, the point at which renewable energy prices will be no higher than conventional energy. Once this target is achieved, the generation of

[8] Itai Trilnick. (1.2.2012) – Zelekha: "Tshuva will not like me after I've calculated his true costs". TheMarker.

renewable energy will no longer have negative social impacts. However, since renewable energies are currently still more expensive, which generally results in higher energy prices and a regressive impact, the social impact of promoting such energies is negative (despite their environmental advantages).

Stage: **Implementation**; *Certainty regarding manner of execution:* **4**; *Social impact:* **(-2)**

Electricity Generation by Biomass

As long as the price of electricity generated from biomass remains higher than that produced by natural gas or coal, a negative impact on vulnerable populations is to be expected. However, it is quite possible that the generation of electricity from waste will eventually not be more expensive (as recycling of waste becomes economically viable for local authorities), in which case this measure will be harmless and potentially beneficial, since it minimizes somewhat the dependency on fossil fuels. Although initially the generation of electricity is based on waste, it is likely that in the future it could become reliant on agricultural crops, thus having a positive impact on residents of the periphery working in agriculture.

Stage: **Planning**; *Certainty regarding manner of execution:* **2**; *Social impact:* **(0)**

Prohibiting Sale of Energy Inefficient Products

Generally, prohibiting the sale of energy inefficient products has complex implications. If the alternative product is significantly more expensive, then such a measure could be harmful to vulnerable populations that cannot afford to buy substitute products, or would be more adversely affected by the decline in their disposable income. On the other hand, if the measure leads to long term savings and the alternative product is not too expensive, then it would be a positive measure, which in fact surmounts a market failure that causes people to buy products which are not cost-worthy. Usually such a measure would likely have been classified as negative, since increased spending on more expensive products primarily affect lower socioeconomic strata. But considering that thus far the most significant household measure was setting regulations on

incandescent light bulbs, the replacement of which generates significant long-term savings with no considerable financing difficulties (since the cost of an efficient bulb is still miniscule as a share of household budgets); and because this measure was accompanied by a government subsidy to help the public purchase the new product, it has been defined as neutral.

Stage: **Implementation**; *Certainty regarding manner of execution:* ***3***; *Social impact:* **(0)**

Replacing Energy Inefficient Appliances

The replacement of electrical appliances is a measure with an unequivocal climate justice aspect. This measure directly addresses vulnerable populations as well as enabling the general population to lessen its dependency on greenhouse gases, assisted by the State and without raising the cost of energy.

Stage: **Implementation**; *Certainty regarding manner of execution:* ***5***; *Social impact:* **(+2)**

Green Taxation of Appliances

In general, it is likely that a green tax on electrical appliances would lead to a reduction in prices of energy-efficient products that are usually more expensive, while increasing the cost of cheaper products. Therefore, such a measure would primarily harm vulnerable populations that tend to purchase cheap, inefficient devices; thus the social impact of a green tax is a negative one, despite its environmental benefits. Such a program could have a positive social impact only if as a result of the taxation it will cause efficient products to be cheaper than inefficient ones, so that the public would choose to buy them, or if the program managed to divert the public's preferences in a cost-worthy manner. Since not enough information is available about the program, we cannot assume that it would meet such goals.

Stage: **Almost non-existent**; *Certainty regarding manner of execution:* **2**; *Social impact:* **(-1)**

Supporting Energy Efficiency and GHG Mitigation Projects

The implementation of this measure had started, through tenders issued by the Ministry of Economy and the Ministry of Environmental Protection. In total, NIS 151 million are expected to be appropriated to fund projects during 2011-2012.

Financial assistance focusing on Israeli industry could lead, in the long term, to some growth in employment rates, but in practice it might actually subsidize capitalists. Another critique might be the fact that nearly a quarter of the budget of the GHG mitigation plan in 2011-2012 is intended to support the industry directly, rather than providing assistance to households in the near future. It seems that we cannot predict any substantial social impact resulting from a measure that focuses on industry, therefore this measure is defined as neutral.

Stage: **Implementation**; *Certainty regarding manner of execution:* **5**; *Social impact:* **(0)**

Encouraging Energy Audits

Audits are expected to be performed in the industrial, commercial, and public sectors. Thus far new regulations have been set with regard to the obligation of conducting energy audits, according to which any plant with an energy consumption exceeding a predetermined level (700 TOE) must execute an audit (Ronen, 2012a: 7). This measure does not focus on households and no significant social impact is expected.

Stage: **Budgeted and in the process of implementation**; *Certainty regarding manner of execution:* **2**; *Social impact:* **(0)**

Establishing an Energy Efficiency Fund

Thus far the Energy Efficiency Fund proposed by the Ministry of Infrastructure had not been established. Discussions regarding such a fund should include examination of its budgetary allocations and financing. According to the Ministry of Infrastructure plan, approximately NIS 30 million of the NIS 200 million (15%) will go towards appliance replacement for vulnerable populations. That is, unlike other programs, the fund is aware of the need for environmental justice, although it doesn't address it substantially. The fund itself will be financed by a 1% increase of the electricity tariff, which is

regressive in essence, as opposed to funding through the national budget, which is essentially more equitable. Due to adverse effects, we have defined the impact of the fund as neutral.

Stage: **Not established**; *Certainty regarding manner of execution:* **4**; *Social impact:* **(0)**

Labeling Electrical Appliances in Accordance with New Standards and a Public Information Campaign

The government had allocated NIS 6 million to the Ministry of Infrastructure, for the purpose of defining energy rating clusters of household electrical appliances. These measures provide information to the public without imposing behavioral change. Such measures are important as they enable the environmentally conscious public to recognize green products, and, not less importantly, they educate the public that green products are often cost-worthy. From a social viewpoint such measures are not expected to be very significant, but they can be of benefit in cases when vulnerable populations have knowledge gaps with regard to the energy efficiency of products.

Stage: **Implementation**; *Certainty regarding manner of execution:* **3**; *Social impact:* **(0)**

Smart Metering of Electricity Consumption and Expanding Time-Of-Use Tariffs

Smart metering allows bi-directionality in the control of the power supply. The utility provider can regulate the supply of electricity to correspond with the grid loads, and the consumer receives full information of her electricity consumption and its costs at different times. An efficient, bidirectional electricity network with many capabilities is generally termed a smart grid. It can, for example, detect precise transmission failures, as well as enable both the consumer and the utility to remotely switch appliances on or off in accordance with different settings. Such a system can lead to substantial savings in energy use, but requires high initial investment.

Time-of-use tariffs enable consumers to pay for their electricity based on the time of use, thereby creating an incentive for shifting the consumption of electricity away from high-peak hours. The threshold for mandatory participation in time-of-use tariffs was

lowered to include consumers who use more than 40,000 kWh**.** Domestic consumers can join the time-of-use tariffs, but the number of participants is negligible. The Israel Electricity Authority held a hearing toward a simpler structure for time-of-use, and the new tariff should be approved during 2012 (Ronen, 2012b).

It is difficult to assess the social impact of a smart grid and time-of-use tariffs, especially without knowing the manner of implementation. Generally, considering the system is expected to lead to electricity savings that will benefit all households, it is likely to have progressive results. Conversely, if funding of the system will be internalized into electricity prices, these effects are likely to be offset. Since such a system might be funded separately as part of the national GHG emissions reduction plan or another governmental project, it is likely to have positive social consequences.

Stage: **Initial Stages**; *Certainty regarding manner of execution:* **3**; *Social impact:* **(+1)**

Differential Power Tariffs

Due to a recent increase in electricity rates, the principle of differential pricing was introduced. The social impact of a differential electricity tariff is positive. Clients who consume less power and are usually from vulnerable populations will pay less, and costs would only surge for bigger customers who generate greater greenhouse gas emissions.

Stage: **Initial discussions**; *Certainty regarding manner of execution:* **2**; *Social impact:* **(+2)**

2. Transportation

In the transportation sector we distinguish between two types of changes: the first refers to technological changes, including steps to promote technologies that mitigate emissions from vehicles and encourage the use of greener vehicles; the second type being behavioral, based primarily on minimizing use of private cars. As noted by environmental organizations[9], the distinction is somewhat artificial, yet it is common in reports on GHG mitigation. Furthermore, it should be noted that the focus is on road-

[9] Letter from environmental NGOs responding to report of the steering committee on GHG emissions mitigation in Israel. 23.11.2010. Recommendation 21.

transport only, which thus far was the only focus of Israeli reports, although air and marine transportation also have significant impacts on greenhouse gas emissions.

Green Taxation of Vehicles

The Green Tax Committee's main recommendations were accepted: a green tax was imposed on vehicles, and a linear method was implemented in determining the use value of each vehicle. The recommendation suggesting to link licensing fees to the age of the vehicle, which would have mainly affected the lower classes, was rejected. One year after its application the green tax was already remarkably successful: the emissions of the average purchased car are lower; but it is important to note that the primary variation was registered in the emissions of nitrous oxides and fine respirable particles rather than carbon dioxide, since the latter carries relatively little weight in the formula determining the vehicle's green score[10]. In April 2012, the Ministry of Finance decided to extend green tax benefits and apply them to hybrid vehicles, and to increase the benefit for electric vehicles. It was additionally decided to update the formula of the green score for vehicles, making it more meticulous starting January 2013.

While green products are often perceived as more expensive, in the case of vehicles the green tax actually lowered prices of cheap small cars that are accessible to the entire population, while raising costs of luxury cars and 4WD, which are associated with the upper classes. Therefore we consider this measure to have positive impacts both socially and environmentally.

Stage: **Implemented**; *Certainty regarding manner of execution:* **5**; *Social impact:* **(+1)**

Standardization of Vehicles to Mitigate Emissions

Presently, the State annually updates emission standards for new cars, based primarily on European and American standardization (Heifetz&Co. and DHV MED, 2009: 151). Options are currently being examined to encourage the installation of means to mitigate emissions, before these are mandated by regulation (Ronen, 2012a: 16). Standardization

[10] Israel Tax Authority, Division of Finance and Planning (11.8.2010) – The Green Tax Reform on Vehicles, one year on.

will have no substantial impact; it is likely that the cost of vehicles might become slightly higher, however it could also result in savings on fuel costs. Therefore at this point it is assumed that impacts will be neutral.

Stage: **Being updated in accordance with European Standards**; *Certainty regarding manner of execution:* **4**; *Social impact:* **(0)**

Scrappage of Old Vehicles

The vehicle scrappage program was launched in early 2010 and was very successful. Some 20,000 vehicles were scrapped in 2010-2011, but the program was terminated by the end of August 2011 due to shortage of funds. It was then restored in early 2012, but halted again as early as March that year, due to high demand and budgetary limitations.

Vehicle scrappage has two advantages: it can generate technological changes and advance the shift to using more efficient vehicles. In addition, unlike a parallel program in the US, in Israel the person delivering a vehicle for scrappage received payment rather than a voucher for the purchase of a new car; thus it could sometimes facilitate a general reduction of transportation by private car.

The program has distinct environmental justice characteristics. It is mainly designated for vulnerable populations that have higher rates of ownership of old cars, and enables the sale of these cars at higher-than-market value in order to mitigate emissions.

Stage: **Implemented**; *Certainty regarding manner of execution:* **5**; *Social impact:* **(+2)**

Promoting Bicycle Lanes

With regard to cycling, the major successes appear to be on the local level. Municipalities across the country started promoting more bike lanes, and the Tel Aviv Municipality is operating the Tel-O-Fun bike rental program with numerous rental stations scattered throughout the city. The National Roads Company announced a master plan to pave 450 kilometers of bike lanes, 30 km of which are currently budgeted[11]. However, at the same time the government rejected the proposal to apply

[11] National Roads Company – Masterplan: Bicycle Lanes in Israel for the Purpose of Commuting.

continuity of the legislative process to a previously proposed bill for the encouragement of cycling that had passed the first Knesset reading[12], but is yet to be fully legislated.

Promoting bike lanes is particularly helpful for people who do not own private cars. Naturally, like other measures, the consequences of this depend on the manner of implementation. If bike lanes are concentrated in high socioeconomic neighborhoods[13] and only focus on recreational routes rather than commuting oriented ones, the impact would be less favorable.

Stage: **Executed locally**; *Certainty regarding manner of execution:* **2**; *Social impact:* **(+1)**

Parking Minimization Policy

In mid-2011, the Minister of Interior authorized new regulations to reduce parking standards in major cities, to be implemented once mass transport lines are in operation. However, by December of the same year the regulations were not yet published and it was alleged that the Minister was reviewing them[14].

On the one hand, minimizing parking space would raise parking prices, particularly affecting mid-low class car owners; on the other hand, in big cities it is likely to increase the demand for public transportation. More public transport users would consequently lead to improved quality of service due to greater public demand for high quality transportation and the economic justification to provide more frequent and convenient routes. Ultimately, public transportation is equitable and environmental, so this measure could have positive consequences in the longer term. Due to the contradictory impacts, it was decided to define this measure as neutral.

Stage: **Under examination**; *Certainty regarding manner of execution:* **3**; *Social impact:* **(0)**

[12] Government Regulation No. 480 (ma222/) – Application of the Law of Continuity on Bill to Encourage Bicycle Transportation, 2008 – second hearing requested by the Minister of Environmental Protection. 26.6.2009.

[13] For example, according to Tel-O-Fun project data, the stations in the north of the city operate better than southern ones. (13.2.2002) – Want to Rent a Bike in Tel Aviv? Go Uptown. nrg.

[14] Nachum-Halevy, R. (8.12.2011) – Yishai Reneged: Parking Standards Will Not be Reduced Until Public Transport is Improved. TheMarker.

Congestion Toll

Although suggestions for congestion charges in Tel Aviv are proposed often, they are not implemented in Israel, and Minister of Transportation Katz declared that imposing such a toll is contradictory to the ministry's policies[15].

The congestion toll is one of the most controversial measures in terms of environmental justice. Seemingly this measure directly increases social disparities by creating roads and/or neighborhoods only for the wealthy. Moreover, Israel has no reasonable public alternatives to private transport; therefore social opposition to such measures is particularly justified. Yet a more complex analysis reveals that an appropriately designed congestion toll could actually benefit vulnerable populations: first, public transportation can use the designated tolled lanes and help users reach their destinations faster. Second, toll lanes increase the State's revenues thus benefitting the entire population, especially when the proceeds are dedicated to improving public transportation. Of course the outcomes depend on the manner of implementation. The tolled fast lane at the entrance to Tel Aviv is an example of a successfully implemented congestion toll. The lane serves buses entering the city; and a Park-and-Ride facility was constructed at the entry point to the fast lane, which succeeded beyond expectations and offers free shuttle services into the city. The OECD recommended considering the construction of additional similar lanes (OECD 2011a). Due to the high level of uncertainty, the social impact of this measure cannot be rated.

Stage: **Not implemented**; *Certainty regarding manner of execution:* **1**; *Social impact:* **(Cannot be evaluated)**

Annulment of Workplace Incentives for Car Use Allowances

With the exception of a reform in the car leasing market and increasing the use value of vehicles in the workplace, no significant measures were implemented to terminate incentives commonly provided by workplaces to employees for car use, in the form of

[15] Gutman, L. (10.4.2011) – Minister of Transport Soothes: Congestion Toll Will Not be Applied in Tel Aviv if There Is No Alternative Public Transport. Calcalist.

car allowances. Such measures were considered by the Ministry of Finance[16] and recommended by the Bank of Israel (Bank of Israel, 2008: 328-336), but were not advanced. While the considerable damages inherent to the encouragement of car possession are evident, and although there is no economic or environmental justification for the continued use of such incentives, a change of policy is not likely in the foreseeable future. The subject came up in a recent ministerial CEO conference, and it emerged that the state is reluctant to open up wage agreements and deal with the response of trade unions/worker representatives to such a move, thus no attempts are made to resolve the issue[17].

Currently, mainly mid-high classes are the primary beneficiaries of workplace car and fuel allowances, and the elimination of these incentives could lead to greater equality among all employees (for example, by requiring that employers also pay car allowances to employees who do not own a private car), or among the general population (for instance by taxing workplace parking); and using revenues to improve public transport. Therefore the proposal is anticipated to have positive impacts on environmental justice.

Stage: **Not implemented**; *Certainty regarding manner of execution:* **1**; *Social impact:* **(+2)**

Campaign to Encourage Cost-Efficient Driving

The Ministry of Transport is preparing an eco-driving campaign for car fleets, truck fleets, buses and private cars. These programs could lead not only to minimizing fuel usage, but also to safer driving (Ronen, 2012a: 15-16).

Such a measure could have a small positive effect because it provides information to the public, but it is estimated that it will not have significant social implications.

Stage: **Budgeted and in planning**; *Certainty regarding manner of execution:* **3**; *Social impact:* **(0)**

[16] Hazelkorn, S. (18.12.2007) – Will State Employees Give Up Their Cars? Ynet.

[17] Galit Cohen, Deputy Director General for Planning and Sustainable Development, Ministry of Environmental Protection – National Conference on Green Growth and Green Jobs, Tel Aviv, 19.3.2012.

Development of Public Transportation

Over the last few years, decisions were made to promote public transportation[18]; the development of Israel Railways continued; local authorities that promote public transportation programs were supported; reforms in bus routes and ticketing were implemented; and a light railway was finally launched in Jerusalem. However, despite all resolutions, actual changes are still slow and far between – public transportation is still not qualitative or accessible enough, and generally it seems that cooperation between the Ministry of Transport and the Ministry of Environmental Protection is lacking. Data indicates that the State is unable to incentivize passengers to switch to public transportation. For instance, in 2010, the average number of bus seats was 276,000, an almost identical figure to 278,000 bus seats registered in 2000[19].

It seems that decision-makers did not pay enough attention to complementary measures recommended by the Green Tax Report, which include more extensive investment in public transportation; the Trajtenberg Committee's recommendations for the improvement of public transportation were also only partially fulfilled: The government did in fact decide to restructure the public transport system, to establish a National Authority for Public Transportation as well as metropolitan transport authorities, and to establish a mass transit system[20]. These decisions are supposed to minimize the centralization in public transport and generate mid-long term betterment. However, the Trajtenberg Committee's numerous recommendations for the improvement of public transportation in the short term, which included a network of fast lines from the periphery to the center, a public transport service focused on the elderly and enhancing metropolitan services, were rejected. Notably, the Trajtenberg report called to promote public transportation not merely due to environmental considerations, but rather because of its impact on low-income deciles that depend on it

[18] Government Decision No. 2228 – Encouraging the Use of Public Transportation. 12.8.2007

[19] Statistical Abstract of Israel – Bus Services on Scheduled Routes, Central Bureau of Statistics.

[20] Government Decision No. 3987 – Establishment of Mass Transit Systems. 18.12.2011; Government Decision No. 3988 – Establishing the National Authority for Public Transportation and Metropolitan Transport Authorities. 18.02.2011; Government Decision No. 3989 – Reducing the Centralization and Enhancing Competition in Public Transport. 18.12.2011;

for employment opportunities, access to social areas and the possibility to actualize recreation. Moreover, according to the committee, shifting passengers to public transport will yield savings for the economy, and efficient public transportation is a prerequisite for economic and social growth (Committee for Socioeconomic Change, 2011: 148-152).

Of all suggestions made in this document, the development of public transportation is probably the one recommendation of highest contribution to climate justice, both because the use of public transportation is higher among the lower and middle classes, and because the development of public transport would provide people with a genuine alternative that could lessen their dependence on cars. Qualitative public transportation would also be helpful in the context of diminishing spatial inequality and enabling residents of the periphery to moderate their dependence on private cars.

Stage: **Partial implementation**; *Certainty regarding manner of execution:* **3**; *Social impact:* **(+2)**

3. Building

Mandating Green Building Standards

In July 2011, the Ministry of Environmental Protection and the Standards Institution of Israel launched a new Green Building Standard (IS 5281), which includes references to eight different building types. That same year a standard for rating buildings based on their energy consumption (IS 5282) was published. However, high uncertainty still prevails throughout the green building field; it is impossible to estimate if and when new regulatory requirements would be applied, how they might be implemented, or what their impacts might be.

The mandating of standards has complex implications. Such a measure would increase housing prices, but at the same time lead to a reduction in electricity costs. Another possibility currently under consideration, is to require at the time of land sale to contractors, as part of terms of the tender, that a certain share of buildings would meet green building standards. According to Housing Minister Atias, such a measure is not

expected to raise housing prices, because prices are primarily determined by supply and demand and not according to construction costs[21]. Since at this stage it is not possible to estimate the regulatory requirements or their effect on housing prices, the impact of this measure cannot be evaluated. If it was estimated that housing prices will indeed substantially increase, it would then be likely to assume that the short term impact would be negative, considering lower classes cannot necessarily afford higher mortgages, even if the subsequent price of electricity is lowered.

Stage: **Discussions**; *Certainty regarding manner of execution:* **2**; *Social impact:* **(Cannot be evaluated)**

Economic Benefits for Green Building

This measure often came up for discussion, and while it is not clear how it might be implemented (mortgage benefits, tax reductions, efficient systems subsidies or green building funds), it appears that it has the support of the Minister of Environmental Protection[22], and the draft for the government's Green Growth Policy states that a discount would be considered on the purchase tax of land on which buildings meeting green standards will be built[23]. According to a report by the Israel Green Building Council, tax benefits are the primary tool among funding tools applied around the world to encourage green building (Israel Green Building Council, 2010: 58). The Israel Tax Authority also recommended tax incentives for green building, but it was argued that the impact of these incentives is limited, and there is a need for a mandatory standard first[24].

If we analyze this measure in a slightly abstract manner, the State is essentially offering to (partially) subsidize the difference in costs between green building and conventional building. This means that housing prices will not rise significantly, but electricity costs in these apartments will decrease. If in the long term most people would live in such

[21] Ariel Atias – National Conference on Green Growth, Tel Aviv, 28.2.2012.

[22] Gilad Erdan – Conference on Green Growth and Green Employment, Tel Aviv, 19.3.2012.

[23] Israel Green Growth Round Table – Government Policies for Green Growth. Draft, 09.05.2012.

[24] Shlomo Philip, Director of Economics, Israel Tax Authority – Knesset Labor, Welfare and Health Committee Meeting – Incentives for Green Building – 30.5.2011.

apartments, such a measure could have positive ramifications in terms of climate justice because it addresses the renter/landlord agency problem, which often prevents the execution of economic measures to promote home energy efficiency. However, if mainly strong populations will be living in green buildings, this would in fact constitute a benefit for upper classes, making it a socially problematic measure.

In other words, this measure also has a high degree of uncertainty. Because the State is unlikely to fully subsidize the difference in cost between green and other housing (and it is unlikely that such a subsidy would be fully granted to the consumer), and since we have no knowledge that the State will be assisting vulnerable populations in this context, it is possible that green apartments would still be more expensive, inhabited mostly by strong populations. Therefore, at this stage it was decided to define this measure as negative; however if special references are made to weaker populations, as suggested by the Green Building Council, the impact of this measure could be positive.

Stage: **Discussions**; *Certainty regarding manner of execution:* **2**; *Social impact:* **(Cannot be evaluated)**

Survey of Buildings

The government has allocated NIS 16 million to conduct a survey of existing buildings to examine their energy efficiency potential, and work on the survey is underway. A comprehensive building survey could help tenants assess the energy efficiency of the building they live in and how it might be improved. This measure would be particularly beneficial for renters, because it could lead to an internalization of the apartment's energy efficiency into its rent price, thus making it beneficial for the landlord to advance energy efficiency projects. However, the Shani Committee recommends focusing on a selective collection of data at this stage, since a comprehensive survey requires considerable resources. Therefore at this time the social impact of the measure is expected to be limited.

Stage: **Budgeted and in planning**; *Certainty regarding manner of execution:* **2**; *Social impact:* **(+1)**

Demonstration Project for Retrofitting Old Buildings and New Green Building

The government had allocated NIS 16 million thus far to promote a pioneer project of new buildings and NIS 7 million to retrofit existing buildings. While the renovation project is delayed, work on the new building demonstration project has begun, but a final report is only expected by 2019 (Ronen, 2012a: 10, 17). The demonstration project is not expected to have significant implications in the short term, and its precise impact depends on the buildings selected for the project.

Stage: **Budgeted and in planning**; *Certainty regarding manner of execution:* **4**; *Social impact:* **(0)**

Training Green Building Personnel

NIS 10 million were allocated for instruction and training of personnel in the field of green building. This measure is not expected to have significant short term implications. However, if it were more substantially budgeted, it could be expected to have positive effects in the longer term: first, it could generate growth in the quantity of qualitative jobs for Israelis in both blue and white collar positions. Green jobs, which are expected to increase significantly in the coming decades (Levy 2011), are outside the scope of this report. Second, a reduction in the cost of personnel training could lead to decreased costs of green building, thereby making it accessible to broader segments of the population. Considering this measure is not expected to affect social disparities or weaker populations in the near future, it was defined as neutral.

Stage: **Budgeted and in planning**; *Certainty regarding manner of execution:* **2**; *Social impact:* **(0)**

4. Fossil fuels

Many suggestions have been brought before the government regarding the internalization of environmental externalities in the transport sector and curtailing

Israel's fuel dependency. However, as detailed in the description of the measures below, climate justice considerations were scarcely taken into account in the planning process.

Encouraging Biofuels

After lengthy discussions, the government rejected the recommendation of the Green Tax Committee and decided to cancel the tax exemption on biodiesel. According to the Finance Ministry, there is some difficulty in enforcing the tax on a mixture of biodiesel and other fuels, and there is no reason to encourage biodiesel in particular as a measure to reduce air pollution. Although biofuels are being researched by Israeli CleanTech companies, it doesn't appear to be in use much as an alternative fuel source in Israel at this time.

It is likely that, at least in the short term, biofuels will mainly be used by diesel operated vehicles, characterizing trucks, taxis and private cars used for lengthy journeys. Tax benefits could therefore theoretically be of some assistance to geographically peripheral populations who are car dependent for their commute to work. Considering fuel taxation is generally regressive, and since diesel is specifically needed by those who depend on vehicles for long trips, a tax reduction on biodiesel might have a moderate positive social impact.

Stage: **Not implemented**; *Certainty regarding manner of execution:* **4**; *Social impact:* **(1)**

Raising Fuel Taxes

Over the past few years the government raised excise fuel taxes: In the 2011-2012 budget, it was decided to raise taxes on gasoline, kerosene and diesel fuel blends by NIS 0.20, and the tax on coal and coke by NIS 24 per ton in the years 2011 and 2012. Although it was proclaimed that the increase was intended to internalize external costs of pollutant emissions[25], it seems that a major consideration was also to increase State revenues through indirect taxes. Not all taxes were raised, thus the Green Tax Committee's recommendation to increase the tax on crude oil was softened, deferred and not yet implemented (Ministry of Environmental Protection, 2012: 135).

[25] Government of Israel (2010) – Government Decisions – Economic Policy for 2011-2012: Structural Changes, Budget Aggregate and Budget Composition. Page 182.

Raising gasoline taxes spurred strong objection. The 2011 hike was canceled after only a month and a half, following the social protest that erupted that summer. The increase planned for 2012 was also canceled in late 2011 following the Trajtenberg Committee, which recognized the externalities of fuel use, but argued against raising fuel prices due to their significant influence on the cost of living (Committee for Socioeconomic Change, 2011: 98). Subsequent to the cancelation of gasoline price hikes, during 2012 the tax was actually cut temporarily, as oil prices were rising and the gasoline consumer price was high. Furthermore, other taxes were also reduced due to an unexpected shortage of natural gas. To prevent electricity prices from rising too dramatically, the Treasury gave the Israel Electricity Company (IEC) a tax discount of 88% on diesel in early 2012, after a lesser discount was previously granted at the end of 2011. In conclusion, while it appears that decision-makers are interested in raising taxes on fossil fuels, in practice such steps are executed hesitantly, and at times taxes are actually reduced.

Since expenditure on fuels as a share of income is usually higher among low-income deciles, a fuel tax raise would have negative social consequences, despite their environmental benefit.

Stage: **Partial implementation**; *Certainty regarding manner of execution:* **4**; *Social impact:* **(-2)**

Reducing Oil Dependency

Following the government's decision to reduce the national dependence on oil, a program totaling NIS 1.5 billion between the years 2011-2020 was launched, aiming to advance the issue by making Israel a knowledge hub of technologies and industries. The program includes the Prime Minister's Award for innovation in alternatives to oil; encouragement of investments in companies in the field that have venture capital backing; investment in research and development; simplifying bureaucracy; and international promotion of the program and of Israeli industry[26]. The program seemed

[26] Government Decision No. 1354 – Establishing a National Effort to Develop Technologies that Reduce the Global Use of Oil in Transport and Strengthening Hi-Tech Industries in the Field. 7.2.2010; Government Decision No. 2790 – Operating a National Plan for the Development of Technologies that Reduce the Global Use of Oil in Transport and Strengthening Hi-Tech Industries in the Field. 30.1.2011.

to be proceeding slowly and encountering bureaucratic difficulties, and by May 2012, about a year and a half after the government's last decision, no formal director had been appointed to the program.

The program budget focuses primarily on the encouragement of investment, academic programs or the Prime Minister's Award, and it is difficult to assess the social impact of such a program. In the short term, most of the money is allocated for research and targeted at strong populations, such as entrepreneurs, academia and private companies, and therefore does not promote equality or aid vulnerable populations. However, in the long run, oil dependence is particularly harmful to vulnerable populations (who spend a particularly high rate of their incomes on fuel) and the promotion of new Israeli industry could benefit the rest of the economy.

Stage: **Planning and execution**; *Certainty regarding manner of execution:* **3**; *Social impact:* **(O)**

Transition of the Israeli Industry to Natural Gas

Following gas discoveries offshore, the Ministry of Industry had started working to convert factories to using gas; the Ministry of Energy and Water is also operating to promote the same goal. This measure focuses mainly on the industrial sector, therefore no significant social impact is expected and it is defined as neutral.

Stage: **Planning**; *Certainty regarding manner of execution:* **3**; *Social impact:* **(O)**

5. Waste

One of the main obstacles in analyzing the consequences of measures in the field of waste is the shortage of data. Currently there is no statistical information regarding social disparities in waste management (except for quantity of waste), so although we know that the mid-high classes produce more waste, it is difficult to assess whether they also recycle more (Climate Justice Policy position paper no. 2., Neugarten, 2013). It is

important to gather more comprehensive information on this sector in order to assess the impact of the measures more accurately.

Encouragement of Recycling
and Diversion of Organic Waste to Non-Landfill Based Solutions

A recent comprehensive reform in waste management addressed goals of minimizing air polluting transport, maintaining land resources, resource efficiency as well as mitigating greenhouse gases. In 2007 a landfill levy was applied, which constitutes a tax on waste disposal, thus encouraging waste recycling or recovery (electricity production). The levy varies according to the type of waste. Funds from the levy are deposited in the "Landfill Fund" and earmarked for the development, construction and upgrading of recycling infrastructure.

In addition, in 2011, the Knesset passed the Packaging Law, requiring importers and manufacturers to recycle a certain percentage of product packages. Mitigation of GHG emissions featured as one of the main arguments to promote the bill[27]. A third program, endorsed by the Ministry of Environmental Protection, is waste separation at source, parting between wet and dry waste in local municipalities. In the framework of this program, 31 municipalities were awarded an initial NIS 350 million support for waste separation, which would enable more qualitative recycling of dry waste and the use of wet waste for compost, organic fertilizer and the production of energy. The Ministry of Environmental Protection will further provide augmented support for waste treatment facilities.

Despite this progress, there was no comprehensive discussion on social implications of the reform in waste management. The increased price of landfilling is likely to raise the costs of waste treatment in local authorities, and will impact residents of different municipalities in varying manners. However, it would appear that climate justice considerations were not guiding decision-makers on this issue. The only social consideration taken into account was the influence the waste reform would have on

[27] Bill to Regulate the Treatment of Packaging – 2010, Page 1116.

employment. The Ministry of Environmental Protection indicates in different sources that recycling will boost employment in the Israeli economy, a claim reinforced by research undertaken by the "Macro Center for Political Economics" (Levy, 2010).

The assumption is that in waste, much like other spheres, encouraging recycling will incur costs in the short term, but long-term benefits are expected. The costs will be reflected in the increasing price of waste treatment, whether due to the higher landfill levy or the high cost of collecting separated waste for recycling. Additionally, the cost of certain products may rise due to growing demand from manufacturers to manage products at the end of their life span.

An increase in prices of basic packaged products is likely to hurt the lower classes. Likewise, if municipal taxes are raised in order to fund waste recycling, regressive consequences are expected. Therefore, measures that increase the costs of waste treatment will have negative social consequences, unless they are accompanied by measures to aid vulnerable populations. In the long term, the cost of waste treatment may not go up at all due to revenues from the sale of collected waste, but weaker municipalities would still be more vulnerable due to funding obstacles, which will make it difficult for them to make the necessary initial investment for separation at source and to withstand the volatility of waste prices.

Stage: **Implementation**; *Certainty regarding manner of execution:* **4**; *Social impact:* **(-1)**

Summary

The main conclusion drawn from the analysis of the many Israeli GHG mitigation programs is that throughout thousands of pages reviewed, there is hardly any direct reference to aspects of climate justice. Two exceptions were noted: concern regarding a price increase of diesel fuel for heating following a tax raise (Israel Tax Authority, 2008), and the focus on vulnerable populations in the electrical appliance replacement program, as part of the Ministry of National Infrastructure's energy efficiency program

(MNI, 2010a). Social justice considerations are naturally pivotal in the Trajtenberg Report, and the committee was often concerned with issues that touch on those discussed above, such as the development of public transport and the gasoline tax, but the committee intrinsically did not address efforts to mitigate greenhouse gas emissions.

The ensuing outcome is extremely problematic. The numerous climate reports do not take into consideration the effect of their proposed measures on disparities in Israeli society or on vulnerable populations, while these issues are considered primarily by committees that are not engaged in climate policy issues. It is important to note that this approach is not essential, and reports from around the world addressing climate change do make reference and integrate elements of environmental justice[28].

Another surprising conclusion is that none of these programs had recommended comprehensive measures for greenhouse gas mitigation. Determining a price for carbon, by means of taxation or setting quotas, is often considered to be the most efficient and effective tool to reduce emissions in the short term, and as a step fostering innovation and diminished dependence on carbon in the long run; therefore it is surprising that it was never recommended to rely on a measure which will determine a carbon price in Israel.

A proposal that comes closest is the internalization of external costs of air pollution, as part of the system administrators' considerations when operating electricity production units. While this proposal refers to the external costs of all fuel types, it is only supposed to be applied in the optimization process of production units in the electricity sector (Ministry of Environmental Protection, 2012: 124-125). A Samuel Neaman Institute report analyzing the government's GHG mitigation plan, strongly recommended the incorporation of a carbon tax into the plan (SNI, 2011: 44-45). The OECD recommendations also argued that a carbon tax should be considered, or at least that taxes on various fuels be adapted to reflect the external damage resulting from the

[28] For example, the Australian Garnaut Climate Change Review devoted an entire chapter of its report to a discussion of the fair distribution of the burden of GHG mitigation (Garnaut, 2008: 385-401).

carbon dioxide contained in them, and, according to such calculations, taxation on coal, natural gas and oil for industrial uses should be increased (OECD, 2011b: 169-170).

Table 1 summarizes the various for greenhouse gas mitigation measures, progress of policies, certainty regarding of manner of execution of each action, and the social impact of each step as discussed above.

Table 1: Summary of Main GHG Mitigation Measures

Field	Recommendation	Stage	Certainty regarding manner of execution	**Climate Justice** Social impact (-2) to (+2)
Electricity	Increasing use of renewable energies	Implementation	4	(-2)
	Electricity generation by biomass	Planning	2	(0)
	Prohibiting sale of energy inefficient appliances	Implementation	3	(0)
	Replacing energy inefficient appliances	Implementation	5	(+2)
	Green taxation of appliances	Almost non-existent	2	(-1)
	Supporting energy efficiency and GHG mitigation projects	Implementation	5	(0)
	Encourage energy audits	Budgeted and in process of implementation	2	(0)
	Establishing an energy efficiency fund	Not established	4	(0)
	Labeling electrical appliances in accordance with new standards and a public information campaign	Implementation	3	(0)
	Smart metering of electricity consumption and expanding time-of-use tariffs	Initial stages	3	(+1)
	Differential power tariffs	Initial discussions	2	(+2)
Transport	Green taxation of vehicles	Implementation	5	(+1)
	Standardization of vehicles to mitigate emissions	Being updated	4	(0)
	Scrappage of old vehicles	Implemented	5	(+2)
	Promoting bicycle lanes	Implemented locally	2	(+1)
	Parking minimization policy	Under consideration	3	(0)
	Congestion Toll	Not implemented	1	Cannot be evaluated

	Annulment of workplace incentives for car use allowances	Not implemented	1	(+2)
	Campaign to encourage cost-efficient driving	Budgeted and in planning	3	(0)
	Development of public transportation	Partial implementation	3	(+2)
Building	Mandating green building standards	Discussion	2	Cannot be evaluated
	Economic benefits for green building	Discussion	2	(-1)
	Survey of buildings	Budgeted and in planning	2	(+1)
	Demonstration project for retrofitting old buildings and new green building	Budgeted and in planning	4	(0)
	Training green building personnel	Budgeted and in planning	2	(0)
Fuels	Encouraging biofuels	Not implemented	4	(+1)
	Raising fuel taxes	Partially implemented	4	(-2)
	Reducing oil dependence	Planning and execution	3	(0)
	Transition of industry to natural gas	Planning	3	(0)
Waste	Encouragement of recycling and diversion of organic waste to non-landfill based solutions	Implementation	4	(-1)

Chapter 3: Climate Justice Policy in Israel

In the framework of this study, we have examined solutions proposed to promote climate justice in other countries and the extent of their relevance to Israel. This chapter briefly discusses policy challenges and suggests a series of concrete recommendations which are appropriate for incorporation into any GHG mitigation plan.

Social Considerations in the Efforts to Mitigate Greenhouse Gases in Israel

The Impact of a Carbon Tax on Social Disparities

One of the main issues troubling supporters of carbon taxation or other measures which would internalize the cost of carbon dioxide, is that it would make the tax system more regressive. It is therefore important to examine whether this issue is also relevant in Israel.

The two sectors emitting most greenhouse gases in the country are electricity and transportation. Table 2 summarizes household expenditure on energy per home by decile, and Table 3 summarizes the impact of the excise fuel tax on households by decile. It should be noted that excise tax on gasoline and diesel in Israel is high even when accounting for carbon dioxide externalities, therefore a policy aiming to internalize carbon prices might not raise fuel taxes; however the price of electricity will undoubtedly increase as a result of this policy.

Table 2: Monthly Household Expenditure on Electricity, Fuel and Gas by Decile, 2009[29]

Decile	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Expenditure **in NIS**	376	340	348	385	388	417	414	436	471	497
Expenditure **as rate of total consumption (%)**	6.32	5.81	5.27	4.96	4.37	4.22	3.80	3.60	3.30	2.94
Expenditure **as rate of net income (%)**	13.9	7.71	6.16	5.31	4.29	3.88	3.29	2.9	2.59	1.78

Table 3: Expenditure on Excise Fuel tax by Decile, 2009[30]

Decile	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Expenditure **in NIS**	72	92	114	119	171	173	191	226	229	264
Expenditure **as rate of net income (%)**	2.7	2.1	2.0	1.6	1.9	1.6	1.5	1.5	1.3	0.9

As can be observed, taxation that would raise electricity prices or transportation fuel prices will be regressive in Israel too. The high expenditure of the lowest decile on household energy is particularly prominent, and suggests a necessity to provide some protection to vulnerable populations in all future greenhouse gas mitigation policies. According to the British definition of fuel poverty, the expenditure of over 10 % of income on heating, it transpires that the first decile is in a state of 'energy poverty', and is very significantly dependent on energy (though the Israeli data refers to all energy uses rather than heating in particular).

Although the rate of expenditure of lowest deciles on electricity and fuel is higher as a percentage of total income, it is important to note that these deciles still emit less

[29] Central Bureau of Statistics – Household Expenditure Survey, 2009: Table 2.1. – Monthly household income by decile according to net income per standard; Table 2.2. – Monthly household consumption expenditure by decile according to net income per standard.

[30] Bar, 2011

greenhouse gases in absolute terms. Therefore, addressing GHG mitigation must continue to focus on the upper deciles too, and the responsibility for emissions should not be assigned to lower deciles. The difference between the high expenditure on carbon extensive actions of the lowest deciles relative to their income and the fact that their expenditure is still low in absolute terms, explains some of the differences between the results of the current study and those previously published by the Association for Environmental Justice addressing inequality in GHG emissions (Rabinovich and Lubanov, 2010)[31].

Inaccessibility to Affordable Fuel (Fuel Poverty)

Unlike northern countries, the weather in Israel is more moderate and household heating prices are not vital on the public agenda; yet, the relevance of the discussion of energy distress or poverty to Israel is twofold. First, electricity prices in Israel are undergoing constant and sharp increases due to the inefficiency of the IEC, the depletion of the Yam Tethys natural gas reservoir and the cessation of natural gas transfers from Egypt. The prices are expected to become more moderate with the connection of the offshore natural gas reserves, but will rise again as environmental taxes increase. Second, the fuel poverty discussion is relevant considering that as far back as 2007, when energy prices were lower, nearly 1.6 million people, approximately 35% of those aged 20 and over, refrained from heating/cooling their homes[32].

It is important to note that since 2007, a number of laws were legislated, granting senior citizens on income support, Holocaust survivors, and disabled people who receive old age pensions, eligibility for a 50% discount on their electricity costs for the first 400 kWh a month[33]. However, because the proportion of the population who forego

[31] Disparities derive from the present study's focus on households and the rate of expenditure from total income, parameters which are relevant when considering the impact of taxation, while the previous research focused on emissions per capita and expenditure as a percentage of total consumption, due to the focus on responsibility for emissions and climate inequality.

[32] Central Bureau of Statistics – Society in Israel, Report no. 2.

[33] IEC website: http://www.iec.co.il/HomeClients/Pages/DiscountForEligible.aspx

heating/cooling their homes is so considerable, it is reasonable to assume that even accounting for discounted electricity bills, many suffer from fuel distress.

Problems of Funding, Information, and Accessibility

Due to the particularly high rate of poverty in Israel, the lower deciles are likely to suffer from liquidity squeezes that prevent them from funding energy efficiency projects, even if these are beneficial in the long term. Likewise, it is frequently reported that the lowest deciles lack access to information.

These funding difficulties and inaccessibility to information were examined by means of researching the quality of life of income support recipients. The number of recipients was approximately 113,600 in 2009, and by definition this is one of the poorest population groups in Israel. The study explored liquidity squeezes using three parameters: a returned check, a limitation on the bank account, and property foreclosure. The study also examined to what extent welfare recipients take advantage of the services to which they are entitled (King and Shavit, 2005). The relevant data is compiled in Table 4.

Table 4: Problems of Funding, Information, and Accessibility among Welfare Recipients[34]

Category	Item	Rate of households
Liquidity problems	Returned check	25%
	Limited bank account	38%
	Foreclosure on property	9%
Access to services – Use of benefits	Discount on municipal taxes and water	84%
	Discount on education	35%
	Discount on transportation	18%

[34] King and Shavit, 2005.

	Rental assistance	61%
Access to services – Reception of services within the last six months	Treatment by social worker	20%
	Transportation to school and employment	7.9%
	Dental treatment	3.7%
	Tutoring for children	6.6%
Problems of information	Lack of knowledge as main reason for not receiving services	51%

The table indicates that problems of funding, accessibility and lack of knowledge are relevant to vulnerable populations in Israel. 38% of households receiving income support have limited bank accounts. These households certainly cannot finance long-term projects. Furthermore, the data suggests that a significant share of households do not take advantage of benefits to which they are entitled, such as discounts on education and transportation costs, or tutoring for children. In some cases, residents do not need these services or are not eligible to receive them, but the survey indicates that in many cases they have no knowledge that such services exist (possibly because they were not appropriately advertised, or since the service is not provided in their municipality). In other words, it is not enough to create programs for low-income earners; such programs must be made accessible for them to be realized.

The Principal-Agent Problem

In terms of housing, one of the main problems that might harm the promotion of energy efficiency projects is the conflicting interests of landlords and tenants. As mentioned, it is not worthwhile for homeowners to invest in energy efficient buildings, as they are not the ones to pay the electricity bills; as a result the renters are adversely affected. In order to assess whether this problem is relevant for Israel, the composition of the population of renters should be examined.

Table 5 summarizes the data and shows that addressing people who live in rented homes is certainly relevant to Israel. On average, 26% of the population rent homes, and the rate is one-third or higher in the three lowest deciles.

Table 5: Rate of People Living in Rented Homes by Decile, 2009[35]

Decile	1	2	3	4	5	6	7	8	9	10
Rate of people living in rented homes (%)	57.2	35.6	33.0	26.0	25.2	22.8	19.9	15.3	14.7	10.4

Transportation Alternatives

A higher carbon price can affect consumers only if they are able to reduce their carbon consumption. The main problem in this context seems to be public transportation in Israel. As noted in the Trajtenberg Report, public transportation is still under development and does not operate on the Sabbath (Committee for Socioeconomic Change, 2011: 98). Furthermore, public transportation throughout most of the country does not operate at night and thus cannot service workers at these hours. The public transportation problem in Israel was expressed in an Or Yarok survey held in 2011, indicating that 70% of responders expressed willingness to use public transportation if it was accessible, regular, quick and convenient, but only 38 % of responders actually use public transportation as their main mode of transport, due to its inconvenience, slow service and lacking availability[36].

Summary of recommendations

As indicated by the research, promoting climate justice in Israel must be based on the following principle of duality: formulation of policy measures directed at substantial mitigation of greenhouse gases, coinciding with these measures having positive social effects. The recommended measures were devised based on international experience,

[35] Central Bureau of Statistics – Household Expenditure Survey 2009: Table 22. Selected Data on Housing Deciles of Households, by Net Income per Standard – Rented Dwellings

[36] Or Yarok Survey: Significant increase of preference for public transport use. http://www.oryarok.org.il

while adapting the international policy measures to the characteristics of Israel. Almost all measures can be applied in the short term. The recommendations were formulated in consultation with economic experts[37].

A Summary of recommendations is provided below:

1	**General Measures**
i	Making climate justice a central consideration in formulating GHG mitigation policies and examining the social impacts of each future step
ii	Using environmental tax revenues to minimize inequality and recompense affected populations, partly by the establishment of a fund to reduce carbon dependence
iii	Examining the possibility of creating a personal GHG emissions permit trading market
iv	Ensuring that GHG emission quotas not be distributed free of charge to polluters
2	**Electricity**
v	Quick launch of a public-private financing plan to fund household energy efficiency projects
vi	Supporting and expanding old appliances replacement schemes
vii	Establishing a differential electricity tariff
3	**Transport**
viii	Preferring the development of public transportation over additional investment in roads and private cars
ix	Encouraging use of bicycles
x	Urban planning that encourages use of public transportation
xi	Annulling workplace incentives for car use allowances
xii	Higher budgeting for the car scrapping program
xiii	Examining the possibility to apply tax brackets for fuel use
xiv	Progressive green taxation with social considerations
4	**Building**
xv	Supporting energy efficiency improving projects

[37] Meeting with Shahar Dolev, Director of Research, Israel Energy Forum, 24.4.2012. Meeting with Dr. Shlomo Swirski, Academic Director, Adva Center, 24.4.2012. Meeting with Gideon Eshet, Yediot Ahronot, 1.5.2012.

xvi Encouraging and consequently requiring landlords to comply with green standards that are cost-effective in the long term

xvii Requiring new dwellings to undergo energy audits and supporting audits of existing households

xviii Energy betterments by the State of public housing

xix Promoting green social planning in all local authorities

5 Waste

xx Subsidizing loans to local authorities that promote waste separation projects

xxi Guaranteeing a minimum price for the purchase of waste

xxii Supporting national campaigns for waste separation

Chapter 4: Summary and Conclusions

An analysis of greenhouse gas mitigation policies worldwide shows that climate justice considerations are only very partially taken into account. The study shows that the importance attributed to social considerations as well as the actual considerations vary from country to country. For example, while Australia is engaged in comprehensive measures for offsetting the regressive consequences of its carbon tax, Britain focuses mainly on the impacts of GHG mitigation policies on home heating expenses. It seems that it is only in recent years that a thorough discussion about climate justice was introduced, and it is reasonable to expect that it will be growing in importance in the future.

At this stage, while implementation is only partial, the main issues that decision-makers will have to address are already identifiable: the tenant-landlord problem hampers energy efficiency in apartments; funding difficulties to advance policies which are cost worthy in the long term; the potentially regressive consequences of energy taxation and in particular an emission trading system; and the absence of low-carbon alternatives in transportation.

The research indicates that in Israel, climate justice considerations are hardly ever taken into account with regard to GHG mitigation measures. This does not mean that all GHG mitigation measures have negative social consequences. An initial analysis of the implications of each of the policy measures suggests that many of them will have no dramatic social consequences, and that some of them will actually be of positive consequences. However, it is clear that should the social impacts have been taken into account beforehand, the effects of measures that increase inequalities and the vulnerability of weak populations might have been moderated, and positive measures could be reinforced, thus promoting a more equitable climate policy.

At this stage it is important to note the limitations of analyzing anticipated impacts of each policy measure. Considering that the manner of implementing some of the measures is still unclear; since it is impossible to predict which technological changes

are expected in rapidly developing green areas; and due to the complex consequences arising from the interaction between the various measures, it is impossible to accurately predict the social consequences of each measure. Nonetheless, the analysis provided is still recommended as a basis for use; yet this report should serve as a starting point for further discussion.

The study emphasizes the major challenges in advancing climate justice in Israel, including the regressive nature of the electricity and fuel taxation system and an inadequate public transportation system.

The research indicates that a climate policy with positive social implications can be promoted. Through a recommended list of concrete policy measures in the areas of electricity, transportation, building, waste, and a number of general measures, it is possible to promote a just GHG mitigation policy.

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The Association of Environmental Justice in Israel (AEJI)
المنظمة للعدل البيئي האגודה לצדק סביבתי בישראל

The Association of Environmental Justice in Israel (AEJI) is a non-partisan, independent body, set up in 2009, focusing on basic issues of environmental justice. It focuses on the inter-connectedness of society, environment and the decision-making framework in Israel to produce policy recommendations that are real and acceptable while promoting the strengthening of democracy, equality and environmental justice values. It also aims to promote active deliberated civic participation especially of minorities and residents of the periphery.

The Association is active in three main fields:

1. Data collection, initiation of research and working papers that attempt to elucidate the core issues of society, environment and the decision-making framework and develop acceptable solutions.

2. Development of policy tools that promote a policy based on the values of democracy, equality and environmental justice.

3. Increasing civic participation in matters of environmental justice and decision-making processes regarding environment and society, as well as empowering civil society especially among vulnerable groups such as minorities and residents of the periphery.