Overview
In the debate on Post-Kyoto climate policy architectures there is concern about the
effectiveness of the inclusive negotiation procedure associated with a Kyoto-type process
[1,2,3]. A substantial leverage on negotiation outcomes may be achieved by working with a
small number of countries representing the major emitters as well as economic and political
powers. Such a group (perhaps along the lines of the Leaders 20 Summit – L20 – suggested
by Canadian Prime Minister Paul Martin) may move forward with stringent unilateral
emission reduction commitments [4]. We compare the economic impacts of this leadership
against a global commitment which keeps with the same world-wide emission budget. We
investigate the incentives for leadership by a limited number of countries under alternative
allocation rules for the global emission budget. Our findings suggest that leadership might
be preferred in case of the egalitarian rule, but costly under polluter-pays or ability-to-pay
regimes. The cost burden of the leaders might be substantially smaller if leadership is
restricted to a transitional phase.

Methods
We describe the trade-off between limited and global coverage from an L20-leaders
perspective: Given some world-wide emission limit over the next decades, the pay-off to
include other countries in a potentially cumbersome UN-debate on global burden sharing
draws with the degree to which participation of countries outside L20 reduces
compliance cost of the leaders.
As a cost-effectiveness framework for numerical analysis we use an intertemporal multi-
sector, multi-region computable general equilibrium (CGE) model of global trade and
energy use. Beyond the consistent representation of market interactions as well as income
and expenditure flows, the dynamic model setting accommodates an assessment of the
adjustment path of economies to exogenous policy constraints over time.

Results
Our simulations suggest that leaders prefer leadership under an egalitarian allocation rule
(ega). For ability-to-pay (atp) and polluter-pays rules (ppa) leadership is costly to the
leaders but these costs can be lowered if unilateral action is limited to a transitional phase.
The figure displays welfare implications in percent of the different regimes for both the
leaders moving forward with ambitious climate policy targets and the rest of the world
(ROW).
Conclusions
We have identified a non negligible trade-off between limited and global coverage from an L20 perspective if leadership is assumed to last for ever. If, however, leadership is restricted to a transitional phase the welfare implications might be reduced substantially. The main driver for the welfare implications turns out to be the income transfer via the carbon endowments. While for an egalitarian allocation rule leaders would prefer an L20 scenario to global coverage for all other analyzed allocation rules make the potential leaders better off if global coverage of reduction commitment is assumed.

Literature