

Practical suggestions to implement benchmarking in the Green Climate Fund Investment Framework

October 10, 2014

In the development of the Fund's investment framework, the GCF Board has highlighted the need for transparent sub-criteria that can be used to evaluate the extent to which proposals fulfill the six criteria for assessing program/project proposals approved by the Board. Sector-specific benchmarks can support a transparent and competitive selection process for proposals to the GCF that ensures submitted proposals are aligned with the evaluation criteria adopted by the Fund's initial investment framework and that the GCF's resources are directed to the most ambitious proposals.

CCAP recommends the GCF board adopt a policy of using sector-specific benchmarks to measure the degree of ambition and transformation towards low carbon development and select proposals for funding. This comment letter illustrates how benchmarks can be used to rate proposals in a fair, transparent and quantitative manner, with a focus on the *impact potential* and *paradigm shift potential* criteria.

In addition to the minimum performance thresholds suggested by the Board, a graduated scale of benchmarks can be used to evaluate the relative performance of proposals within the same target sector. In order to strengthen the illustrative assessment methodology put forward by the GCF Investment Committee, the Board should add concrete benchmarks specific to each sector or sub-sector to measure the relative degree of transformation towards low-carbon development reflected in each program proposal submitted to the GCF.

The methodology presented here defines benchmarks for performance based on recent experience in the sector as a whole. This would enable consistent and transparent evaluation of performance over time, and encourage more ambitious proposals from applicants by communicating preferred outcomes within a sector. The proposed approach also explicitly considers and differentiates for the key country circumstances that affect achievements within a sector.

Specifically, in Annex II of the GCF/B.08/20, "Further Development of the Initial Investment Framework", we believe benchmarks could be incorporated in the sub-criteria for *impact potential*, *paradigm shift potential*, and *efficiency and effectiveness* criteria. In the steps that follow, we illustrate our recommended approach to establishing benchmarks and proposal scorecards using examples from the waste and renewable energy sectors.

Our comments also address the need to consider the *efficiency and effectiveness* criteria in tandem with a proposal's score on *paradigm shift potential*. Assessing co-financing leverage ratios in isolation could

reward business-as-usual projects that are already economical, whereas the Board should reward leverage in the context of the transformational potential of the proposal.

1. Define groupings of comparable countries within the sector

Within a given sector, proposals should be evaluated based on performance on sector-specific indicators of low-carbon development, taking into consideration country circumstances. For example, within the waste sector, a country's income level is the major determinant of investment in waste management, including waste management solutions that avoid methane emissions from landfills. Comprehensive approaches that reduce the most emissions tend to have the highest up-front costs, yet governments in developing countries cannot fully pass the cost of low-carbon solid waste management along to consumers.

In the power sector, key factors influencing investments in renewable energy include renewable energy potential, as well as current endowments of fossil energy (e.g. coal and natural gas) and whether or not the country is a net-importer of fuels to produce electricity. These factors influence the relative costs of renewable energy versus conventional alternatives.

Accordingly, we recommend that proposals be evaluated within groupings of countries that reflect similar national circumstances.

- In the **waste sector**, comparable country groups should be defined based on income level; for example, using the World Bank's country classifications of lower income, lower-middle income, and upper-middle income developing countries determined by Gross National Income (GNI) per capita.
- In the **renewable energy sector**, among countries with the potential to pursue a given renewable energy technology¹, we recommend the following comparable groups:
 - Countries likely to face higher cost barriers to renewable deployment, including those countries who produce fossil fuel.
 - Countries likely to face lower cost barriers to renewable deployment, including net-energy importers and those with limited domestic fossil fuel resources.

Although comparable groups for scoring proposals could be further differentiated to reflect a greater degree of variation across countries, we recommend limiting the number of groups in order to maintain simplicity and transparency in the evaluation process. Groupings, if used, should reflect inherent factors that directly influence performance and cannot be corrected with a policy change.

¹ We assume that countries proposing projects in RE have relatively high potential for the proposed RE technology

2. Define sector-specific indicators to evaluate proposals

The next step for each sector or sub-sector is to define specific indicators to evaluate ambition and transformation, which are used to assess proposals within comparable country groups. In general, we suggest using quantitative metrics that measure the following:

- **Change in performance**, defined as the extent to which the proposed actions will improve country performance on sector-specific indicators. More points should be allocated to proposed actions that represent significant improvements in a country's performance for a given indicator. For example, large shifts in performance offer a way to define ambition and progress towards transformation in a sector.
- **Country starting point**, defined as the degree of progress the country has already made in the sector in recent years. By including this indicator, the GCF can reward proposals from countries that have already taken action and demonstrated significant progress in achieving transformational change in the sector.

We note that performance metrics are only useful if the projected levels of performance are explained and well-justified. This will include demonstrating that proposed policy changes will be enforced or that the proposed incentives will be sufficient to drive the projected level of low carbon investment. In addition, proposals should demonstrate that key barriers to low carbon transformation will be overcome through policy, including regulatory change and incentive schemes. In their proposals to the GCF, submitting parties should explain whether and how their existing policies or proposals address common barriers to low-carbon investments in the applicable sector.

The Board should consider defining a minimum threshold for eligibility based on the extent to which countries address these barriers in order to ensure resources are allocated only where adequate policies are in place to allow the effective use of funds. Proposed policy mandates should include enforcement mechanisms, while countries proposing economic incentives should include sufficient evidence that such schemes will achieve cost-effective and ambitious mitigation. If a proposal passes a minimum threshold for eligibility, the relative strength of existing and proposed policy efforts can be evaluated and scored, as described in the sections that follow.

Waste sector

Proposals in the waste sector should be scored based on indicators that capture how much waste is diverted from disposal altogether, as well as based on how much of the overall solid waste stream is treated in a low- or zero-carbon manner. Priority mitigation activities in the waste sector emphasize waste minimization, as well as material recovery, defined as composting and recycling. These strategies lower emissions by reducing the volume of waste that is landfilled, and have significant up-stream mitigation benefits associated with the conservation of raw materials, improved energy and resource efficiency, and fossil fuel avoidanceⁱ. Control and avoidance of landfill methane gas through low-carbon waste management practices (e.g. MBT and landfilling with landfill gas recovery) is another central component of effective mitigation in the waste sector. To implement a scoring system based on benchmarks and sector best practices, weights should be set for the different elements, for example:

- *Low-carbon waste management*: Proposals that pursue low-carbon waste management technologies (including mechanical biological treatment (MBT), waste-to-energy and landfill gas to energy technologies, and landfilling with landfill gas recovery), as opposed to continued investment in traditional landfills, should receive a higher score. Investment in small-scale landfills is the least preferred option, since they lack the necessary scale to implement methane capture and use. More points can be allotted to countries that aim to leapfrog traditional landfills and adopt comprehensive low-carbon alternatives such as MBT with full material recovery. (20%)
- *Low-carbon management starting point*: Early and unilateral action can be rewarded by allocating points to proposals from countries that have already taken meaningful unilateral action to invest in low-carbon solid waste infrastructure. This demonstrates commitment and encourages replication. (5%)
- *Change in material recovery rate*: Proposals will be scored based on the extent to which proposed actions will increase the material recovery rate. (20%)
- *Material recovery rate starting point*: Proposals from countries that have already made significant progress in their material recovery rate at the time of submitting an application would receive more points than those with lower recovery rates. (5%)

In addition, submitting parties should explain whether and how their existing policies or proposals promote economic and regulatory policies that encourage material and energy recovery and promote low-carbon solid waste management practices, including the following:

- *Economic instruments* including tipping fees, landfill taxes, municipal waste user fees, Renewable Portfolio Standards, tax credits and other fiscal incentives can support low carbon waste management and waste minimization and recovery. (30%)
- *Regulation of solid waste disposal* including bans on illegal dumping, and tariff regulation that allows compensation for waste diversion through alternative waste treatment technologies. (20%)

Renewable energy sector

In the case of renewable energy, we recommend the following quantitative indicators:

- *Change in the share of renewable energy*: The change in the share of renewables in power generation reflects a transformation of a country's power sector energy mix away from conventional fuels. More points would be allocated to proposed actions that deliver a significant increase in the current share of renewables in power generation. (40%)
- *Renewable energy share starting point*: A country's initial share of renewable energy in power generation at the time of submitting an application is an indicator of the progress the country has already taken towards transforming its energy sector. Countries who have already made significant progress in transforming their power generation mix at the time of submitting an application would receive more points than those that have not. (10%)

In addition, submitting parties should explain whether and how their existing policies or proposals address the following common barriers to renewable investment:

- *Regulatory barriers*, including eliminating intermittency and capacity penalties and enacting renewable portfolio standards. (30%)
- *Economic barriers*, including price support policy to encourage renewable energy generation and removal of fossil fuel subsidies and (10%)
- *Barriers to grid access*, including facilitating grid extension and grid interconnection (10%)

3. Define benchmarks for sector-specific indicators within each group

Countries within different comparable scoring groups can be expected to perform differently on the indicators above. For example, a country that exports energy due to an endowment of fossil fuels will likely have higher economic barriers to renewable deployment and should be scored more generously than a country that imports fuels for electricity production and already has a strong economic incentive for renewable energy investment. Therefore, within a given sector, we recommend that countries within each group be evaluated against each other. The indicators themselves would be the same, but the benchmarks to assess performance for each indicator will differ.

To illustrate how this works we walk through an example for *change in the share of renewable energy* indicator. The graphs below shows change in the share of wind energy in electricity generation across countries with high wind potential from 2001 to 2011 using data from the International Energy Association. Figure 1 shows the share of wind in power generation for countries that are net exporters and may face higher cost barriers to renewable deployment, while Figure 2 shows countries that are net energy importers, likely due to insufficient low-cost domestic fossil fuel resources. We define separate benchmarks for each of these groupings based on actual performance across countries.

In the case of the net energy importers, top performing countries² increased their share of wind energy by an average of 11% over the last decade. Therefore, to be assigned a high ranking, a proposal from this group of countries would be expected to match this level of effort. A minimum level of effort towards an ambitious and transformative outcome might be set at the average level of improvement for the group, or roughly 2%.

² We define top performing countries as the top 10% of performers across countries in the group

Figure 1: Change in the share of wind in power generation across net energy exporters

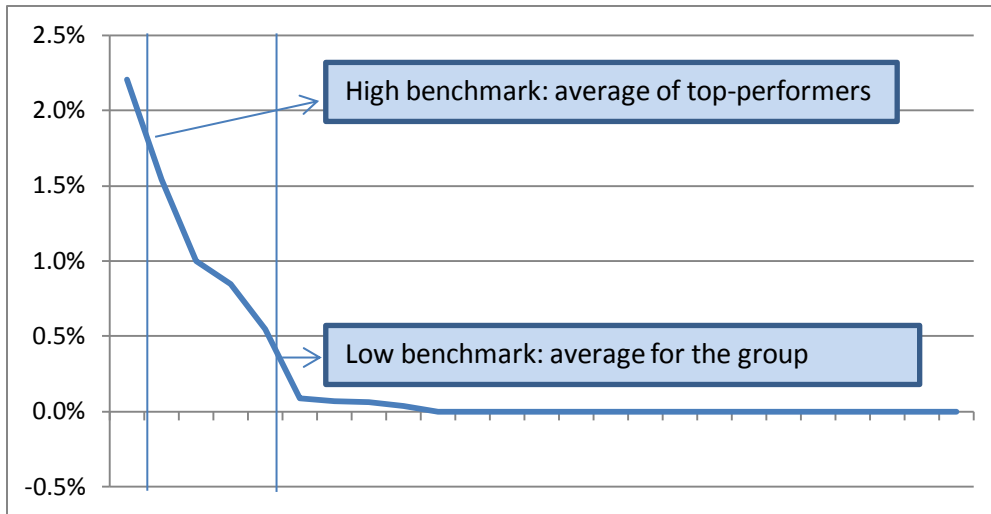
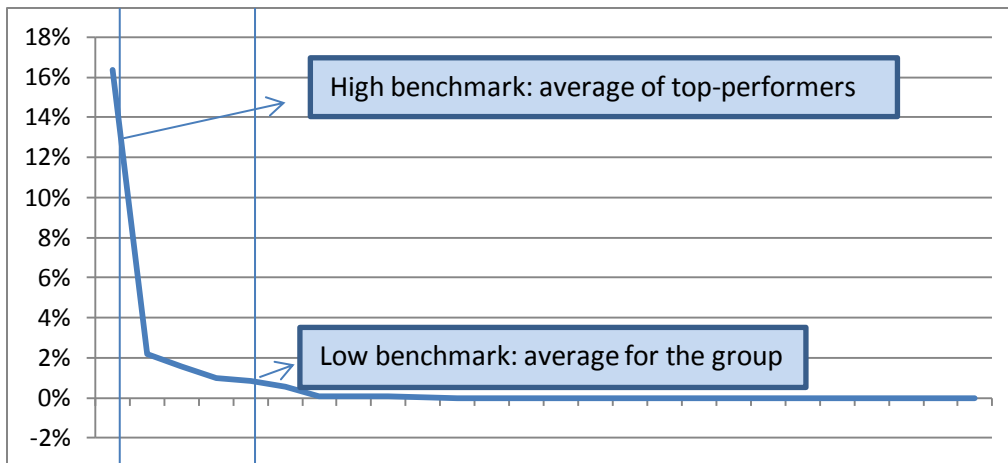


Figure 2: Change in the share of wind in power generation across countries net energy importers



To better differentiate among different proposals in the renewable energy sector and to facilitate scoring, we suggest establishing breakpoints along the curve for each grouping to define four performance levels, ranging from low to high (low, medium-low, medium-high, high). These ranges are shown in Figure 3 below, as well as in the illustrative scorecards to renewable deployment included in the following section.

Figure 3: Benchmarks for change in the share of wind in power generation for countries with high wind potential

| Performance levels | Change in the share of wind in power generation | |
|-------------------------|---|----------------------|
| | Net energy exporters | Net energy importers |
| High (more point value) | 1.5% or more | 11.0% or more |
| Medium-high | 1.0% - 1.5% | 6.5% – 11% |
| Medium-low | 0.5% – 1.0% | 2.0% – 6.5% |
| Low (less point value) | 0.5% or less | 2.0% or less |

Change in share of wind in power generation is the percentage point change from 2000 to 2010
Sources: IEA, 2001-2011.

4. Develop scorecards to evaluate proposals from comparable countries

To be eligible for further evaluation for financial support, the sector-specific indicators above should be used in combination with minimum policy thresholds. If minimum policy thresholds are met, proposals should be evaluated using scorecards that measure performance on benchmark indicators for comparable countries.

Table 1 shows an illustrative scorecard for renewable energy proposals for countries with high renewable energy potential in wind, and countries likely to face lower barriers to renewable energy deployment, defined here as net energy imports. Table 2 shows a separate scorecard for energy-exporting countries likely to face higher barriers to renewable energy deployment. These scorecards contain the same set of indicators, but the benchmarks for indicators 1 and 2 differ to reflect observed performance for countries within that group. Scorecards for each comparable group can be used to rate the performance of proposed actions along each benchmark indicator. Points assigned to each indicator can be weighted and summed to reach a final composite score, which can be used to rank and prioritize proposals within each group.

Table 1: Illustrative scorecard for renewable energy proposals, net energy importing countries with high wind potential

| | Benchmark Indicator | Low | Medium-low | Medium-high | High | Scoring points | Weight |
|----|--|-------------|-------------------|--------------------|--------------------|--|--------|
| 1. | <i>Change in the share of renewable energy</i> | <2% | 2-6.5% | 6.5-11% | >11% | | |
| | Point Rating | 1 | 2 | 3 | 4 | | 40% |
| 2. | <i>Renewable energy share, starting point</i> | <2% | 2-6% | 6-12% | >12% | | |
| | Point Rating | 1 | 2 | 3 | 4 | | 10% |
| | Policies to address: | Weak | Adequate | Strong | Very strong | | |
| 3. | <i>Regulatory barriers</i> | 1 | 2 | 3 | 4 | | 30% |
| 4. | <i>Economic barriers</i> | 1 | 2 | 3 | 4 | | 10% |
| 5. | <i>Access to the electric grid</i> | 1 | 2 | 3 | 4 | | 10% |
| | TOTAL SCORE | | | | | $\Sigma(\text{scoring points} \times \text{weight})$ | |

Table 2 Illustrative scorecard for renewable energy proposals, net energy exporting countries with high wind potential

| | Benchmark Indicator | Low | Medium-low | Medium-high | High | Scoring points | Weight |
|----|--|-------------|-------------------|--------------------|--------------------|--|--------|
| 1. | <i>Change in the share of renewable energy</i> | <0.5% | 0.5-1.0% | 1.0-1.5% | >1.5% | | |
| | Point Rating | 1 | 2 | 3 | 4 | | 40% |
| 2. | <i>Renewable energy share, starting point</i> | <1% | 1-1.5% | 1.5-2% | >2% | | |
| | Point Rating | 1 | 2 | 3 | 4 | | 10% |
| | Policies to address: | Weak | Adequate | Strong | Very strong | | |
| 3. | <i>Regulatory barriers</i> | 1 | 2 | 3 | 4 | | 30% |
| 4. | <i>Economic barriers</i> | 1 | 2 | 3 | 4 | | 10% |
| 5. | <i>Access to the electric grid</i> | 1 | 2 | 3 | 4 | | 10% |
| | TOTAL SCORE | | | | | $\Sigma(\text{scoring points} \times \text{weight})$ | |

Efficiency and effectiveness criteria

In Annex II of the GCF/B.08/20, “Further Development of the Initial Investment Framework”, “leverage potential” is considered as a stand-alone sub-criteria in assessing *efficiency and effectiveness*. CCAP recommends that the Board assess the ratio of co-financing leveraged only in conjunction with and evaluation of a proposal’s performance on the *paradigm shift potential* criteria. Assessing co-financing leverage ratios in isolation could reward business-as-usual projects that are already economical, whereas the Board should reward leverage in the context of the transformational potential of the proposal. These transformational proposals will go beyond business as usual to change the economics of the sector (e.g., risk-return equations), leverage significant investment, and ultimately achieve significant emissions reductions.

Translating scores to funding

Our recommended approach to benchmarking and scoring proposals will identify the top-performing proposals in each defined group and across sectors. We suggest the GCF select proposals on the basis of performance on the six investment criteria—with a particular focus on the *mitigation impact potential* and *paradigm shift potential* criteria—without regard to the amount of funding requested.

The GCF could simply decide to support proposals with the top scores. Alternatively, there may be good reasons to ensure balance in the number of proposals funded across the different groups and sectors. Once the top proposals are identified, the Board can determine the amount of funding to allocate to each of the top-scoring proposals taking into consideration income level, the need to overcome financial barriers, and proposed domestic financial contributions.

Income level may or may not be a factor in defining comparable groups for scoring proposals, but must be a factor in determining support. In particular, Least Developed Countries (LDCs) will warrant support not just for overcoming narrow barriers, but to build capacity to enable implementation of policies.

Higher financial barriers to low-carbon investments could indicate greater need for international finance. In the waste sector, international support may have the greatest impact if used to finance the incremental cost of a lower-carbon technology. Providing support to countries early on in their development of a formal solid waste management system can help prevent lock-in to high emitting waste management infrastructure. For countries who have already made significant investments in small landfills, there is an opportunity for the international community to support alternative mitigation options compatible with small-scale sites. In the case of renewable energy, support can help countries overcome infrastructure and economic barriers to renewable deployment, generating a paradigm shift in the power sector where it may not happen otherwise. Countries with lower barriers can be expected to achieve more ambitious renewable deployment, with international funding to support more narrowly-targeted efforts including diversification of the renewable mix.

On proposed financial contributions, higher income countries might be expected to contribute more financially to climate change mitigation efforts, while LDCs would not need to propose such contributions.

Conclusion

Through the use of sector-specific benchmarks, it is possible to develop an objective scorecard to assess proposals to the GCF, taking into consideration inherent differences across countries. Sector-specific benchmarks can help the Board select priority proposals for funding, ensuring that the Fund’s resources are allocated to the most ambitious and transformational proposals, while providing developing countries a better understanding of the role that international finance can play in supporting their efforts.

To ensure the validity of proposed levels of ambition and transformation, sector-specific benchmarks should be used in combination with minimum policy thresholds. To be eligible for further evaluation for financial support, each proposal must demonstrate how certain sector-specific barriers are overcome through enforceable policy mandates that require a particular level of low carbon investment or changes in financial incentives— backed by economic and financial analysis—that demonstrates the expected level of low carbon investment.

Finally, in evaluating the economic and financial soundness of a proposal, to avoid preference for proposals that limit ambition and transformation to investments with the shortest-term payback periods (e.g., efficient lighting) when a whole-house approach would be far more transformational and still cost-effective, we recommend that the GCF review cost-effectiveness and leverage potential in tandem with ambition and transformation. The score for these activity-specific sub-criteria would weight both.

Specific recommended changes are specified in the tables below.

| Criterion | Coverage area | Activity-specific sub-criteria | Illustrative assessment factors |
|------------------|-------------------|--|--|
| Impact potential | Mitigation impact | Contribution to shift to low-emission sustainable development pathways | Expected tonnes of carbon dioxide equivalent (t CO ₂ eq) to be reduced or avoided <i>Add:</i> The degree to which the proposal will improve country performance on one or more sector-specific indicators (e.g., the <i>change</i> in performance) |

| | | | |
|--|--|--|--|
| | | | <p>across a sector or subsector)³</p> <ul style="list-style-type: none"> - In the case of renewable energy proposals, this could be the <i>change</i> in the share of renewable energy as a share of total power generation. - In the waste sector, this could be 1) the <i>change</i> in the share of waste managed using low carbon strategies, and 2) the <i>change</i> in the share of waste that is recovered through recycling and composting. <p>The degree of progress the country has already made in the sector (e.g., the starting point)</p> <ul style="list-style-type: none"> - In the case of renewable energy proposals, this could be the starting share of renewable energy as a percent of total power generation. - In the waste sector, this could be 1) the starting percent of waste managed using low carbon strategies, and 2) the starting percent of waste that is recovered through recycling and |
|--|--|--|--|

³ All numerical claims must be substantiated via enforceable policy mandates and/or financial incentives backed by economic or financial analysis.

| | | | |
|------------------------------|---|--|---|
| | | | composting. |
| Paradigm shift potential | Contribution to the regulatory framework and policies | <i>Add:</i> Potential to overcome regulatory and economic barriers through policy mandates and incentives | <p><i>Add:</i> Evidence that the proposal addresses barriers to investment in low carbon technologies or infrastructure via policy mandates and incentives</p> <ul style="list-style-type: none"> - In the renewable energy sector, this would include a list of common regulatory barriers (e.g., intermittency and capacity penalties), economic barriers (e.g., removal of subsidies, new incentives) and barriers to grid access (e.g., grid extension and interconnection). |
| Efficiency and effectiveness | Amount of co-financing | <i>Replace</i> “Leverage potential (mitigation only)” <i>with</i> “Potential to catalyze private and public sector investment, assessed in context of performance on industry best practices sub-criteria” | |

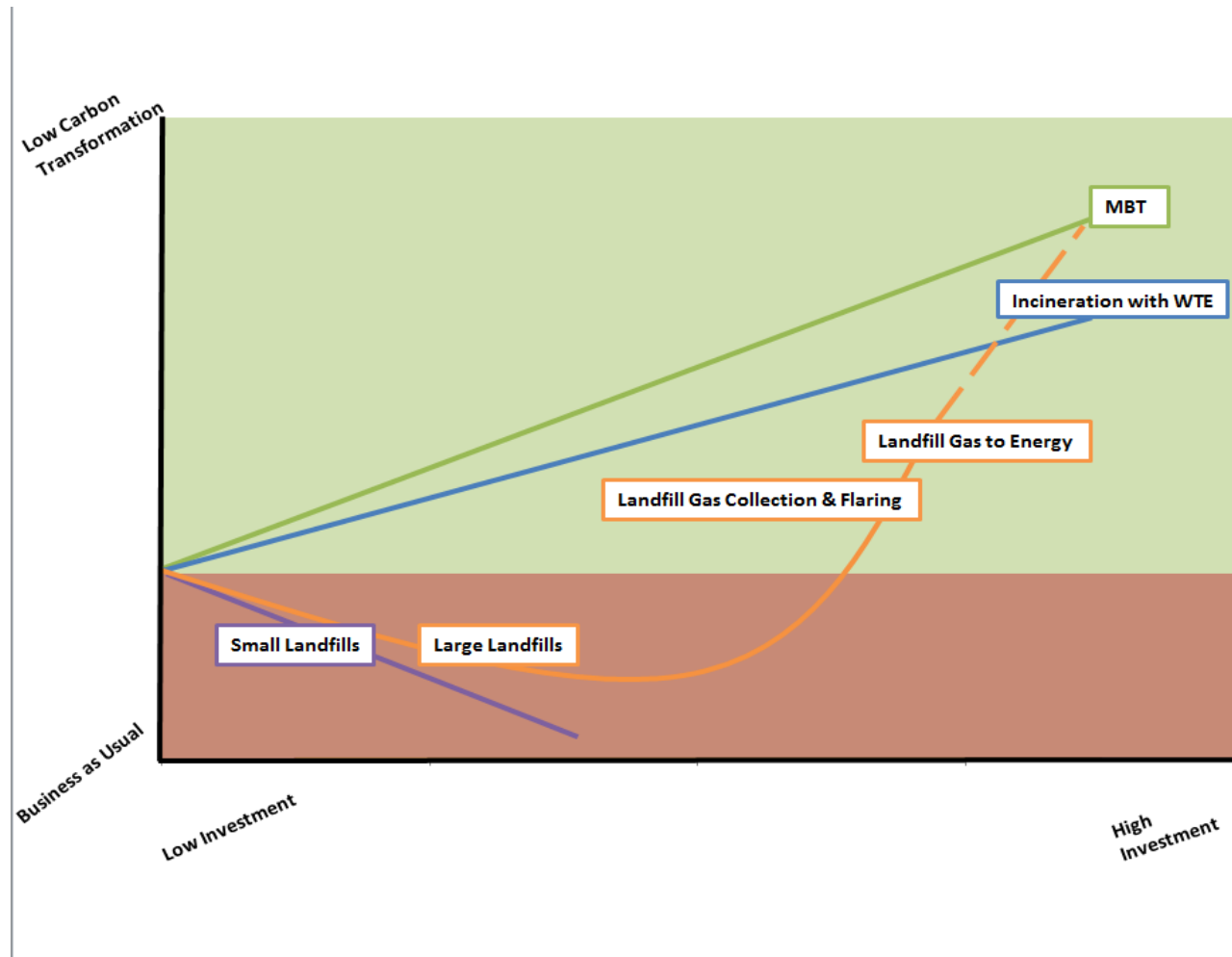
Appendix I: Low-carbon waste management

Although CDM projects for landfill gas flaring and recovery with energy generation have been increasing in developing countries, mitigation of greenhouse gas from landfills is still not widespread. Benchmarks for performance should not be based on existing disposal practices, as current practices tend to increase emissions as waste generation rates increase and landfills replace open dumping. However, we can look to best-practices in developed countries to identify potential mitigation options, modified for the solid waste characteristics and conditions of the developing world.

In Figure 4, we identify various technology options available for solid waste management, with each line representing a trajectory that a country can take in developing the disposal and treatment components of their solid waste management system. The y-axis represents the extent to which a given technology contributes to low-carbon transformation in the waste sector, and the x-axis reflects the required level of investment to implement that technology. Note that this is an abstraction from the many caveats that may impact relative costs and abatement potentials of different technologies.

The least desirable option from a climate standpoint is investment in small-scale landfills, for which abatement opportunities are limited. The downward trajectory of this option reflects increasing emissions as additional sites are built. Investment in large landfills in the absence of methane capture will also lead to growing emissions. However, landfills built at scale are compatible with low carbon control options, including landfill gas capture with combustion with and without energy generation. The former, which involves flaring of biogas in closed landfills, is a common feature of CDM projects. While it reduces methane emissions from decomposition, it provides no byproduct of economic value. Landfill gas to energy can generate greater emissions reductions, but requires higher upfront investment.

Figure 4: MSW disposal and treatment technology options



Alternatively, countries can avoid landfilling and associated emissions significantly through technologies that reduce the volume of disposed waste and recover or neutralize methane gas, including MBT and incineration with waste-to-energy. MBT can reduce waste volumes by half, and can produce a number of marketable products including compost, recycling, and refuse-derived fuel. However, the technology entails substantial upfront and operating costs. Although countries who have invested in landfills with sufficient scale can later adopt MBT technologies – represented by the dotted orange line in Figure 4– early investment in MBT can avoid the need for substantial land disposal infrastructure.

Incineration with waste-to-energy and other thermal processes also dramatically reduces landfill volumes and converts biogas for use as electricity or heat. However, incineration with waste-to-energy is not viable in much of the developing world due to the high water content of solid waste.

These options can define benchmarks for addressing GHG emissions from waste disposal and treatment from low to high carbon intensity (Table 2). At minimum, investments in landfills must ensure appropriate scale to allow for management of landfill gas. However, there is an opportunity for countries to “leapfrog” sanitary landfill technology to a significant degree – facilitating a higher level of

sectoral transformation—by investing in alternative waste management technologies, such as MBT. In order to follow this lower-carbon waste management pathway, middle income countries will likely require international support.

Table 2: Benchmark scale for low-carbon waste disposal and treatment strategies

| | |
|----------------------------|-----------------------------------|
| High performance benchmark | MBT |
| ↑ | Landfill gas to energy |
| | Landfill gas capture with flaring |
| Minimum benchmark | Landfills built at scale |

¹ IPCC 2007. Bogner, J., et. al. “Waste Management.” Climate Change 2007: Mitigation. Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. New York: Cambridge University Press, 2007.

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