

# **‘Second Opinion’ on King County Green Bond Framework**

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# Summary

The King County Green Bond Program (KCGBP) framework provides a progressive framework for climate-friendly investments. King County has ambitious emission reduction goals and a comprehensive Strategic Climate Action Plan (SCAP) that provides a roadmap for mitigation and resilience. The county has taken action to implement the SCAP and reduce emissions from own operations. The KCGBP will focus on initiatives that reduce the emissions of the county's operations. However, the county aims to provide leadership and incentives to the community to reduce countywide emissions.

The KCGBP framework lists eligible projects that are supportive of promoting the transition to low-carbon and climate -resilient growth and is supported by a strong governance structure. Proceeds will be used to finance new projects; refinancing is only permissible for projects that were originally funded by the KCGBP.

The selection and reporting procedures are well described in the green bond framework. The green bond governance committee (GBGC) includes environmental experts who have the right to veto projects based on environmental concerns. King County is committed to impact reporting and will disclose on an annual basis: all funded projects, individual project reports, greenhouse gas and other targets, as well as performance metrics, where available. At their discretion, the GBGC can seek third party assurance of any aspect of a project's green attributes, to determine eligibility or verify reporting. CICERO encourages King County to apply lifecycle considerations systematically and take into account rebound effects where relevant, to be more transparent on the climate risk exposure of its investments. We also encourage the independent review of green bond reporting.

Based on an overall assessment of the activities that will be financed by the green bond, King County Green Bond Program framework is awarded the Dark Green shading. The framework includes medium green projects such as energy efficient new buildings and upgrades. It will be imperative that GBGC applies its framework in a rigorous manner to ensure that a balance of project types is implemented to fulfill the high ambitions of the framework. The GBGC should take extra care when selecting green building projects including the purchase of trucks for solid waste processing, and transportation projects to ensure that only the most feasible environmentally friendly solutions are selected.

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# 1. Introduction and Background

As an independent, not-for-profit, research institute, CICERO Center for International Climate Research provides Second Opinions on institutions' framework and guidance for assessing and selecting eligible projects for green bond investments and assesses the framework's robustness in meeting the institutions' environmental objectives. The Second Opinion is based on documentation of rules and frameworks provided by the institutions themselves (the client) and information gathered during meetings, teleconferences and e-mail correspondence with the client.

CICERO is independent of the entity issuing the bond, its directors, senior management and advisers, and is remunerated in a way that prevents any conflicts of interests arising as a result of the fee structure.

CICERO has established the global Expert Network on Second Opinions (ENSO), a network of independent non-profit research institutions on climate change and other environmental issues, to broaden the technical expertise and regional experience for Second Opinions. CICERO works confidentially with other members in the network to enhance the links to climate and environmental science, building upon the CICERO model for Second Opinions. In addition to CICERO, ENSO members currently include Basque Center for Climate Change (BC3), International Institute for Sustainable Development (IISD), Stockholm Environment Institute (SEI), and Tsinghua University's Institute of Energy, Environment and Economy. A more detailed description of CICERO can be found at the end of this report. ENSO encourages the client to make this Second Opinion publically available. If any part of the Second Opinion is quoted, the full report must be made available.

CICERO's Second Opinions are normally restricted to an evaluation of the mechanisms or framework for selecting eligible projects at a general level. CICERO does not validate or certify the climate effects of single projects, and thus, has no conflict of interest regarding single projects. CICERO is neither responsible for how the framework or mechanisms are implemented and followed up by the institutions, nor the outcome of investments in eligible projects.

This note provides a Second Opinion of King County Green Bond Program (KCGBP) Framework and policies for considering the environmental impacts of their projects. The aim is to assess the KCGBP Framework as to its ability to support King County's stated objective of reducing greenhouse gas emissions, preparing for the impacts of climate change, and leading on climate action.

This Second Opinion is based on the green bond framework presented to CICERO by the issuer. Any amendments or updates to the framework require that CICERO undertakes a new assessment.

CICERO takes a long-term view on activities that support a low-carbon climate resilient society. In some cases, activities or technologies that reduce near-term emissions result in net emissions or prolonged use of high-emitting infrastructure in the long-run. CICERO strives to avoid locking-in of emissions through careful infrastructure investments and moving towards low- or zero-emitting infrastructure in the long run. Proceeds from green bonds may be used for financing, including refinancing, new or existing green projects as defined under the mechanisms or framework. CICERO assesses in this Second Opinion the likeliness that the issuer's categories of projects will meet expectations for a low carbon and climate resilient future.

### Expressing concerns with ‘shades of green’

CICERO Second Opinions are graded dark green, medium green or light green, reflecting the climate and environmental ambitions of the bonds and the robustness of the governance structure of the Green Bond Framework. The grading is based on a broad qualitative assessment of each project type, according to what extent it contributes to building a low-carbon and climate resilient society.

This Second Opinion will allocate a ‘shade of green’ to the green bond framework of King County:

- Dark green for projects and solutions that are realizations today of the long-term vision of a low carbon and climate resilient future. Typically this will entail zero emission solutions and governance structures that integrate environmental concerns into all activities.
- Medium green for projects and solutions that represent steps towards the long-term vision, but are not quite there yet.
- Light green for projects and solutions that are environmentally friendly but do not by themselves represent or is part of the long-term vision (e.g. energy efficiency in fossil based processes).
- Brown for projects that are irrelevant or in opposition to the long-term vision of a low carbon and climate resilient future.

The project types that will be financed by the green bond primarily define the overall grading. However, governance and transparency considerations also factor in, as they can give an indication whether the institution that issues the green bond will be able to fulfill the climate and environmental ambitions of the investment framework.

## 2. Brief Description of King County's Green Bond Framework and Rules and Procedures for Climate-Related Activities

King County is the most populous county in Washington State, with over 2 Million residents. The county is geographically diverse with mountainous areas and a coastline on the Puget Sound where the county's largest city, Seattle, is situated.

**Policies:** King County has committed to reducing emissions from own operations to 50 % of the 2007 baseline by 2030. Also, several of the county's divisions have committed to carbon neutrality, and the Department of Natural Resources and Parks (DNRP) has already reached this goal. King County also has a target of reducing countywide greenhouse gas (GHG) emissions by 25 % by 2020, 50 % by 2030 and 80 % by 2050 (2007 baseline). The KCGBP will focus on initiatives that reduce the emissions of the county's operations. However, the county aims to provide leadership and incentives to the community to reduce countywide per capita emissions.

To support its emissions targets, King County Council adopted a Strategic Climate Action Plan (SCAP) in 2012. The SCAP has been through regular reviews and updates. The 2015 SCAP encompasses new priorities and direction from the Executive and the Council, the results of a technical analysis quantifying pathways to achieving the needed GHG reductions and results from a collaborative stakeholder engagement process. The SCAP has five goal areas: transportation and land use, building and facilities energy, green building, consumption and materials management, and forests and agriculture, and an additional section on climate preparedness. Within each of these areas, the SCAP outlines priorities, targets, actions and assigns responsibility among county agencies.

As of 2015, King County was not on track to meet the reduction targets. Emissions from county operations have decreased by 1.2 % compared to the 2007 baseline, falling short of the 15 % reduction target. The county recognizes that significant action will be necessary to meet their reduction targets, both at a community and operational scale. A 2017 policy paper on the plan outlines priorities and funding allocation towards the SCAP for the 2017 – 2018 budget. More recent analysis of county emissions including new actions, such as a recent agreement to purchase wind power, show that King County should achieve its operational target to reduce emissions by 25% by 2020.

**Definition:** The King County Green Bond Program (KCGBP) will fund projects that have environmental benefits and assist the County in mitigating or adapting to climate change. The projects should align with the SCAP, as well as, other environmental regulations and policies. The KCGBP will fund projects in the following areas: renewable energy, green building and energy efficiency, clean transportation, water and wastewater management and climate change adaptation.

**Selection:** King County will establish a Green Bond Governance Committee (GBGC) responsible for screening projects. Senior level staff from Performance & Budgeting, Treasury, Dept. Natural Resources & Parks, and the Strategic Climate Action Plan (environmental specialists) will serve on the committee. The environmental specialists will have veto power in the nomination process to ensure that project nominated to receive funds from green bond issuances meets the expected standards that are outlined in the SCAP.

Any Capital Investment Program within the County can nominate a project to the GBGC. At their discretion, the GBGC can seek third party assurance of any aspect of a project's green attributes, to determine eligibility or verify reporting. All projects will be subject to King County's Environmental Purchasing policy and program. The policy reflects a long-term commitment to the purchase of environmentally preferable products and relates to a range of products and services - from pest management to antifreeze.

**Management of proceeds:** In line with the Green Bond Principles an amount equal to the net proceeds (net of fees and underwriting expense) will be recorded in a designated account, which tracks the use and allocation of funding. As long as the account has a positive balance, funds will be dedicated from this account and allocated to approved Eligible Projects. The proceeds will be used to fund new projects and upgrades of existing infrastructure.

**Transparency and Accountability:** Proceeds will be used to finance new projects, refinancing is only permissible for projects that were originally funded by the KCGBP. Funded projects will have their own accounting designation in the financial management system, which can be used to track proceeds. The County will disclose the amount of green funds allocated to specific projects, the total project size, and impact, as well as, the percentage of completion of projects. Projects will be linked to the appropriate bond(s). The County will create a website with a list of all funded projects, individual project reports, greenhouse gas and other targets such as energy use, as well as performance metrics, where available. King County has informed us that performance metrics will be updated on an annual basis.

The table below lists the documents that formed the basis for this Second Opinion:

**Table 1: Documents Reviewed**

<b>Document Number</b>	<b>Document Name</b>	<b>Description</b>
1	King County Strategic Climate Action Plan (SCAP)	The SCAP outlines the County's priorities, targets, and strategies/actions. 2015 SCAP is an update of the 2012 SCAP.
2	King County 2017-2018 Proposed Budget Policy Paper: Climate Action Plan	Outlines 2017-2018 investments towards meeting the SCAP.
3	King County Strategic Climate Action Plan 2015 Annual Report	Tracks strategies, actions, and performance across SCAP five goal areas. The report includes KPIs and progress towards established targets.
4	Fact sheet: King County Department of Natural Resources (DNRP) is 'Beyond Carbon Neutral.'	Overview of DNRP's Carbon Neutral strategy and DNRP's carbon accounts showing a negative carbon balance for 2015

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5	Memorandum on Cedar Hills Regional Landfill – EPA GHG Mandatory Reporting Rule – the calendar year 2015	Summary of audit completed by SGS Engineers of DNRP emissions calculations for Cedar Hills Landfill
6	GHG Emissions Inventory Methodology Review, King County, DNRP	Cascadia Consulting group third-party review of DNRP GHG inventory methodology
7	Webpage: DNRP’s 2015 Emissions Sources	Overview of 2015 GHG emission sources
8	Webpage: DNRP’s 2015 Emissions Removals	Overview of 2015 GHG reduction and removal strategies
9	King County Green Bond Framework	The Green Bond Framework for King County DNRP

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### 3. Assessment of King County’s Green Bond Framework and environmental policies

Overall, the King County Green Bond Framework provides a sound framework for climate-friendly investments. The framework and procedures for KCGBP are assessed, and their strengths and weaknesses are discussed in this section. The strengths of an investment framework with respect to environmental impact are areas where it clearly supports low-carbon projects, whereas the weaknesses are typically areas that are unclearly or too generally described. Pitfalls are also raised in this section to note areas where issuers should be aware of potential macro-level impacts of investment projects.

#### Eligible projects under the Green Bond Framework

At the basic level, the selection of eligible project categories is the primary mechanism to ensure that projects deliver environmental benefits. Through selection of project categories with clear environmental benefits, green bonds aim to provide certainty to investors that their investments deliver environmental returns as well as financial returns. The Green Bonds Principles (GBP) state that the “overall environmental profile” of a project should be assessed and that the selection process should be “well defined.” The Kings County Green Bond Framework has five eligible categories: renewable energy, energy efficient new buildings and upgrades, clean transportation, water, and adaptation.

*Table 2 Eligible project categories*

Category	Eligible project types	Green Shading and some concerns
Renewable Energy	<ul style="list-style-type: none"> <li>• Development, construction, and operation of photovoltaic solar electricity and wholly dedicated transmission infrastructure</li> <li>• Development and construction of wind farms and wholly dedication transmission infrastructure</li> <li>• Bioenergy from renewable, local feedstock and construction of municipal solid waste (MSW) landfill cells designed to deliver landfill gas to a bioenergy processing facility.</li> </ul>	<b>Dark Green</b> <ul style="list-style-type: none"> <li>✓ All projects will require environmental approvals from Washington State (SEPA), Federal Authorities (EPA), and King County Environmental Purchasing Policy</li> <li>✓ Consider emissions from construction phase, as well as, landscape issues and mass deposits</li> </ul>
Energy Efficient New Buildings and Upgrades	<ul style="list-style-type: none"> <li>• Municipal Institutional buildings (LEED V4 Platinum, Living Building Challenge or Net Zero greenhouse gas emissions)</li> <li>• Energy upgrades and retrofits</li> </ul>	<b>Medium Green</b> <ul style="list-style-type: none"> <li>✓ King County’s long-term target is carbon neutral buildings</li> <li>✓ LEED and other certifications include aspects important to long-term sustainable development, e.g. site</li> </ul>

	<ul style="list-style-type: none"> <li>• Communal heat systems related to renewable energy or wastewater treatment systems</li> <li>• Solid Waste Processing (The build out of transfer stations and purchase of trucks for transport may be a part of the project, subject to the trucks being fuel efficient hybrids (electric) or those running on bioenergy. ) Vehicles run solely on fossil fuel are prohibited.</li> </ul>	<p>selection and consideration of brownfields, urban density and planning, and access to public transportation.</p> <ul style="list-style-type: none"> <li>✓ These certification levels alone, however, do not necessarily ensure passive or plus housing</li> <li>✓ Fossil fuel MSW (municipal solid waste) trucks (hybrids) could be eligible for financing. MSW hybrid trucks would not be plug-in, instead operating in certain phases in all electric mode.</li> </ul>
Clean Transportation	<ul style="list-style-type: none"> <li>• Operations and infrastructure for urban rail systems (metro and electric light rail)</li> <li>• Operations and infrastructure for urban bus rapid transit (BRT) ( electric or hybrid)</li> <li>• Transit fleet conversion to electric drive buses</li> <li>• Active transportation infrastructure (bike lanes in cities, etc.)</li> <li>• Transportation logistics</li> </ul>	<p><b>Medium Green to Dark Green</b></p> <ul style="list-style-type: none"> <li>✓ King County’s goal is to achieve a zero emissions fleet. Currently, the fleet is a mix of hybrid electric and fossil fuel run. New capital investments will be for zero emission or hybrid electric to replace fossil fuel buses and the corresponding zero emission infrastructure like charging stations.</li> <li>✓ Major transit projects require federal and municipal Environmental Assessment SEPA and King County Environmental Purchasing Policy</li> </ul>
Water	<ul style="list-style-type: none"> <li>• Water infrastructure upgrades and efficiency improvements</li> <li>• Improvement in wastewater systems handle higher demands of increasing populations and changing environmental factors like increased rainfall (combined sewer overflow and treatment systems)</li> <li>• Grey water recycling in buildings (retrofit &amp; new construction)</li> <li>• Habitat restoration</li> </ul>	<p><b>Dark Green</b></p> <ul style="list-style-type: none"> <li>✓ Consider negative impacts on wildlife, nature and lifecycle pollution. Avoid negative impacts on biodiversity.</li> <li>✓ Consider emissions from construction phase and landscape issues and mass deposits</li> <li>✓ Large projects are required to go through the Washington State Environmental Policy Act (SEPA) environmental review process</li> </ul>
Adaptation	<ul style="list-style-type: none"> <li>• Resilience infrastructure to reduce impacts of flooding and increased rainfall. These projects may include elevation of roads and bridges.</li> </ul>	<p><b>Dark Green</b></p> <ul style="list-style-type: none"> <li>✓ No new roads or other fossil fuel infrastructure would be considered, Sections of road associated with a</li> </ul>

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| <ul style="list-style-type: none"> <li>• Soft coast protection based on e.g. ecosystem-based principles such as “Green Shores</li> </ul> | <p>flood control initiative (the portion of the roadway along a levy upgrade or new levy) may be included</p>   |
|  | <ul style="list-style-type: none"> <li>✓ No infrastructure to fossil fuel plants would be eligible for funding by the KCGPB</li> <li>✓ Large projects are required to go through the Washington State Environmental Policy Act (SEPA) environmental review process</li> </ul> |
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## Strengths

King County Green Bond Program is anchored in the county’s comprehensive plan for climate action. The SCAP clearly outlines priorities, targets, actions and assigns responsibility. The plan includes discussion of unintended environmental and community impacts, as well as a process for stakeholder engagement. The SCAP also commits the county to yearly reporting against targets. The SCAP includes targets for the green bond eligible categories. Example targets and 2015 performance for renewable energy and green building include:

### *Renewable Energy Production*

- Target: Produce renewable energy equal to 100 percent of total county government net energy requirements by 2017 and each year after that, excluding the public transit fleet.
- 2015 Performance: King County exceeded this goal by generating renewable energy equivalent to 103 percent of its net energy requirements, excluding fuel attributed to the public transit system fleet.

### *Green Building*

- Target: By 2020, 100 percent of King County projects achieve LEED Platinum certification or better. By 2030, 100 percent of King County projects achieve certifications that demonstrate a net zero greenhouse gas emissions footprint for new facilities and infrastructure.
- 2015 Performance: 50 percent of reported projects achieved LEED or Sustainable Infrastructure Scorecard Platinum ratings, an increase of 28 percentage points over 2014.

The SCAP also includes an assessment of climate impacts and risks, including plans for further research, and a roadmap for countywide resilience. The resilience planning process is science-driven, outlines the expected practical implementation and assigns ownership to county departments. For example, the county has established an agreement with the University of Washington to model and statistically analyze climate change impacts on rainfall patterns. This research will be input to updated models on stormwater design requirements, which the Water and Land Resources Division will incorporate into future updates of the King County Surface Water Design Manual. The KCGBP will support the implementation of mitigation and resilience targets outlined in the SCAP.

The framework takes several steps to avoid fossil fuel lock-in, among others by explicating excluding new roads and limiting transportation logistics projects to clean transportation options. The eligible infrastructure projects

exclude any infrastructure for fossil fuel or nuclear. Proceeds will not be used to finance utilities, which may have a share of fossil fuel revenue, as the county is not involved in the production and distribution of energy. Renewable energy projects may be pursued as a strategy to reduce carbon emissions in line with the SCAP.

KCGBP framework includes both electric and hybrid electric BRT. King County has informed us that the vast majority, over 80 percent, of funding is expected to be allocated to zero emissions electric drive buses and related infrastructure. This statement is in line with a public report commissioned by King County Executive Dow Constantine, which charts the path to a zero-emission Metro bus fleet between 2034 and 2040.

KCGBP outlines a comprehensive and transparent reporting at the project level. Public reports are at a minimum to include a project description, the KCGBP criteria, greenhouse gas emissions targets, and energy performance targets. At their discretion, the GBGC can seek third party assurance of any aspect of a project's green attributes, to determine eligibility or verify reporting. Cicero encourages the development of and use of verifications of Green Bonds achievements.

### **Weaknesses**

There are no obvious weaknesses to the King County green bond framework

### **Pitfalls**

The KCGBP framework includes one medium to dark green category and one medium green category, Energy Efficient New Buildings, and Upgrades. The transition to a low-carbon and climate-resilient future requires passive or plus housing. King County has a target of zero emission buildings and has taken steps towards this goal, however, green building certification alone does not necessarily ensure passive or plus housing.

Several voluntary environmental certification systems provide some level of measurement of the environmental footprint of a building, including energy efficiency measures. One of the most widely used certification systems is Leadership in Energy and Environmental Design (LEED). LEED includes aspects important to long-term sustainable development, e.g. site selection and consideration of brownfields, urban density and planning, and access to public transportation. LEED V4 includes an energy performance requirement. However, even a LEED Platinum rating falls short of guaranteeing a climate-friendly building.

CICERO is encouraged by King County's steps towards zero emission buildings. By 2020, King County has committed to identifying and making substantial progress for at least ten new Net Zero Energy or Living Building Challenge construction or retrofit projects. As of 2015, King County has identified two potential county projects for Living Building Challenge certification.

Under the Green Building category, any energy performance related retrofit costs funded as upgrades could be eligible. Energy efficiency retrofits are climate-friendly investments, however, without any minimum performance requirements; there is a risk of lock-in of less energy efficient solutions. King County has, however, aggressive energy use targets and a good governance framework. The GBGC will have an important role in safeguarding the environmental integrity of funded retrofit projects and should take extra care when selecting projects in this sub-category. The county has informed us that they will report energy use from funded buildings, providing investors with transparency into the performance of funded projects.

Another potential pitfall in this category is the potential for partial fossil fuel driven trucks. Under solid waste processing, the purchase of trucks for transport may be a part of the project. King County has informed us that these trucks will either be fuel-efficient hybrids (electric) or run on bioenergy.

Overall, the project category Green Buildings receives the Medium Green shading. CICERO Dark Green shading is particularly difficult to achieve in the building sector because buildings have a long lifetime. CICERO Dark Green shading in the building sector, therefore, conforms to very strict measures.

The sustainable transportation category has been allocated a medium to dark green shading due to the possible inclusion of vehicles partially powered by fossil fuels. King County has informed us that the vast majority of funding for BRT is expected to go to towards electric vehicles and has already taken steps to electrify its fleet. The GBGC will have a substantial responsibility to ensure the environmental integrity of clean transportation projects and is encouraged to take additional steps in due diligence when evaluating projects involving hybrid vehicles.

#### *Impacts beyond the project boundary*

Due to the complexity of how socio-economic activities impact the climate, a specific project is likely to have interactions with the broader community beyond the project borders. These interactions may or may not be climate-friendly, and thus need to be considered with regards to the net impact of climate-related investments.

#### *Rebound effects*

Efficiency improvements may lead to rebound effects. When the cost of an activity is reduced, there will be incentives to do more of the same activity. From the project categories in Table 2, an example is improved energy efficiency, which in part may lead to more energy usage. King County should be aware of such effects and possibly avoid Green Bond funding of projects where the risk of rebound effects is particularly high.

# Appendix: About CICERO

CICERO Center for International Climate Research is Norway's foremost institute for interdisciplinary climate research. We deliver new insight that helps solve the climate challenge and strengthen international climate cooperation. We collaborate with top researchers from around the world and publish in recognized international journals, reports, books and periodicals. CICERO has garnered particular attention for its work on the effects of manmade emissions on the climate and the formulation of international agreements and has played an active role in the UN's IPCC since 1995.

CICERO is internationally recognized as a leading provider of independent reviews of green bonds, since the market's inception in 2008. CICERO received a Green Bond Award from Climate Bonds Initiative for being the biggest second opinion provider in 2016 and from Environmental Finance for being the best external review provider (2017).

CICERO Second Opinions are graded dark green, medium green and light green to offer investors better insight in the environmental quality of green bonds. The shading, introduced in spring 2015, reflects the climate and environmental ambitions of the bonds in the light of the transition to a low-carbon society.

CICERO works with both international and domestic issuers, drawing on the global expertise of the Expert Network on Second Opinions. Led by CICERO, ENSO is comprised of trusted research institutions and reputable experts on climate change and other environmental issues, including the Basque Center for Climate Change (BC3), the Stockholm Environment Institute, the Institute of Energy, Environment and Economy at Tsinghua University and the International Institute for Sustainable Development (IISD). ENSO operates independently from the financial sector and other stakeholders to preserve the unbiased nature and high quality of second opinions.

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