22 September 2022

Response matrix for Energy efficiency Sectoral Guide

Summary

The accompanying sector guide was released for consultation in May 2022 and the consultation was open until August 2022 to provide sufficient time for stakeholder to provide inputs. Consultation was open to the Board, advisers, observers, NDAs, Direct and International Access Entities, Civil society, Private sector representatives, Partner institutions and sector experts. The Secretariat received more than 160 specific comments and feedback on this draft. These and the responses by the Secretariat sector experts on how these comments were considered in the updated version of the sector guide is contained in this document.

This feedback and response matrix has been prepared for information purposes only to share the different comments received by the organizations that submitted feedback to the GCF in response to the public consultation of the "Energy efficiency Sectoral Guide" draft for consultation version 1.

The information and content in this document do not imply any judgment on the part of GCF concerning the legal status of any territory or any endorsement or acceptance of such boundaries.

Responses to feedback noted here are those of sector experts and may not necessarily be those of the GCF.

The mention of specific entities, including companies, does not necessarily imply that these have been endorsed or recommended by GCF.

For further inquiries regarding this feedback and response matrix please contact us via: sectoralguides@gcfund.org

Sectoral Guide Section	Feedback (verbatim)	Organization	Response from GCF/DMA sector specialists
General	Overall, the GCF Energy Efficiency Sector Guide covers well the challenges related to the implementation of energy efficiency solutions as well as solutions that could be implemented to reduce GHG emissions in the countries concerned.	Global Affairs Canada	Thank you for your kind feedback. Already covered.
General	According to IRENA, international climate goals require global GHG emissions to reach net zero by 2050, or earlier. A combination of renewable energy/energy efficiency solutions can contribute significantly to the reduction of CO_2 emissions by 2030. Thus this aspect should be taken into consideration in the programming of GCF energy efficiency projects/programs.	Global Affairs Canada	Already covered. Throughout the text ambitious, systemic, cross-sectoral approaches are encouraged, within and across the pathways. Annexes provide multiple resources how to advance planning and implementation.
General	To successfully implement this guide, it is important to build the capacity of grantees, including by participating in existing voluntary partnerships, such as ENERGY STAR® and the Superior Energy program, and through workforce development and training programs to improve energy efficiency across sectors, particularly in developing countries.	Global Affairs Canada	Agreed. Capacity building is specifically mentioned and already covered within the coalitions and knowlede part of EE pathways. The guide compiles a long list of such ressources in its annex.
General	It can be difficult to ensure the replicability of a particular project as socio-economic environments can differ, causing a project to fail. It would be more appropriate to speak to the adaptability of projects/investments to the local context in order to find effective approaches anchored in the environment.	Global Affairs Canada	Agreed, this is however beyond the scope of the guide, to be addressed in funding proposals.
General	It would be interesting to see proposals for GHG reduction targets given the impact of energy efficient solutions combined with renewable energies for different important sectors such as industry, transportation, and buildings.	Global Affairs Canada	Indeed, the guide encourages such a systemic approach. Details are however out of scope for the guide, to be addressed in funding proposals.
General	In June 2021, Canada joined other G7 Leaders in signing the 2030 Nature Compact, which has a global mission to halt and reverse biodiversity loss by 2030. Our world must not only become net zero, but also nature positive. Canada is fully committed to ensuring coherence between the urgent action required to address climate change with the broader effort to protect nature and address biodiversity loss. In line with Canada's engagement we encourage GCF to integrate nature into their analysis, policy dialogues, investments and operations.	Global Affairs Canada	Thank you for your updates. This appears more relevant for other guides (e.g. Forest and Land use) and might be addressed in the scope of selected funding proposals (depending on their local context).
General	The United States supports the sectoral guide's focus on cold supply chains, particularly as it relates to promoting sustainable, energy efficient cooling to avoid food waste and loss as well as associated emissions.	United States	Noted. Already covered.
General	We support the focuses in the guidelines on MEPS for all appliances. GCF efforts on MEPS should ensure that, in addition to setting the MEPS, countries are equipped to perform the needed testing of equipment and enforcement. Testing and enforcement should have a stronger focus in the guidelines.	United States	Agreed. Updated in the barriers for the 3rd pathway. Already covered in drivers.
General	There is no mention of using GCF to help set up, improve and scale up Energy Efficiency funds. These type of national funds are critical to support long term energy efficiency investment and sustainability of programs after international support. There is an opportunity for GCF to support, accelerate and co-finance these national initiatives that could be improved and scaled up with technical assistance and international expertise.	United States	Noted. Already covered in financial instruments across pathways, that encourage mobilising, pooling, blending and scaling finance for EE (while often not explicitely mentioned as EE funds, as the naming of such funds varies a lot).
General	I recommand providing templates for developing EE proposals and tools to develop the baseline and cost benefits analysis suggested in the document	United States	Beyond the scope of this guide. See other GCF guidance available and to be developed.
General	Related to the paradigm shifting pathway of enhancing "space" energy efficiency, it would be valuable to frame the sector guidelines to focus on the whole building envelope for energy. While there are some references to the building envelope and heating/cooling spaces, an increased focus on the whole building envelope would be valuable.	United States	The scope for energy, material and resource efficiency is strenghtend across the text, independent of a specific pathway. Please consult as well the GCF sectoral guide for cities, buildings and urban systems.
General	Further sectors: The document does not include the electricity, water/sanitation and transport sectors. Given the importance of these sectors for the paradigm-shift, we consider it critical that the guidelines also encompass the transport and water/sanitation sectors. Moreover, with regard to industry sectors, guidelines should go beyond steel, chemicals and cement and also cover aluminium, food, textiles and others. Furthermore, industrial parks and their energy supply infrastructure should be open for proposals.	Germany	Agreed, a few more industry sector examples are included. Industrial parks are listed as potential recipients in chapter 6. Funding proposals need to provide such details. Kindly consult in addition other sectoral guides for water, sanitation and transport (as highlighted in Table 1).

General	Missing from the financial paradigm shifting pathways is a focus on the consumer as a key aspect of market opening and development. As consumers are often reluctant to pay more upfront for appliances, such as air conditioners, that have higher energy efficiency, and often lack confidence in whether those appliances are as efficient as they claim to be, this presents a significant barrier to uptake of highly energy efficient equipment. Recommend the sectoral guide includes pathways to implement incentives for consumers to purchase high energy efficient equipment and to improve consumer acceptability and awareness.	United States	Already covered in the third EE pathway. End-users and consumers are frequently mentionend. Beyond scope aspects not treated, as specific designs and financial schemes are part of funding proposals.
General	The draft guide is very technology-, process- and infrastructure focused but does not acknowledge and indicate the importance of social and including gender considerations of technology use, access, appropriateness and applicability. It lacks a people-centric focus on beneficiaries. The draft guide is largely silent on the fact that a discussion of technology utilized (energy efficiency for what kind of technology or application) has related social inclusion dimensions, including related to gender and intersectional factors of age, ethnicity, indigeneity, economic class etc., which are not sufficiently mentioned.	Heinrich Böll Foundation Washington, DC	Disagree. The guide, in line with other sectoral guides, can only provide generic GCF ESS guidance and refer amongst others to EE-specific lessons learned, policies, case studies. Specific project designs, including ESS considerations, are part of FPs.
General	There is an under-reference to and discussion of the role of the public sector, especially in the context of enhancing 'space' energy efficiency and with respect to industrial process-related energy efficiency; this does not acknowledge the role of state-run enterprises and the signaling/modeling function that can come from effectively implementing EE in public sector-owned and provided industries, building stocks and services, thus neglecting the reality in many developing countries and thus the continued relevance of public sector investments in this sector. The public sector in the guide seems to be relegated solely to providing the 'enabling' environment with its regulatory and its procurement functions in favor of private sector actors. The discourse should be more balanced.	Heinrich Böll Foundation Washington, DC	Disagree. EE business models - as discussed throughout the guide - can be driven by both public and private sector entities. Indeed this is country specific, e.g. an energy service company (ESCO) can be either a private or a public entity.
Executive Summary	Often mentioned by IEA (https://www.weforum.org/agenda/2022/01/iea-energy-efficiency-worlds-first-fuel-net-zero/) as "First Fuel" we would prefer to see Energy Efficiency not last in this table. (Also applies to Table 1 in the introduction)	Germany	This table refers to other guides and synergies - no prioritisation is implied. To avoid a potential misunderstanding, the guides are now listed in alphabetical order.
Executive Summary	Resource efficiency: We see strong links between energy efficiency and resource efficiency, thus a link to the topic of "resource efficiency/circular economy" would be appreciated. (Also applies to Table 1 in the introduction)	Germany	Agreed, however no change required. Resource efficiency is already covered here and in Table 1. Circular economy is captured across the guide within energy, material and resource efficiency discussions.
Executive Summary	In listing cross-sectoral issues related to the agriculture and food security sector, energy efficiency in food processing (not just cold supply chains) should be mentioned and addressed. The technology focus utilized (energy efficiency for what kind of technology) has related social and gender-dimensions, which are not acknowledged.	Heinrich Böll Foundation Washington, DC	Already covered, please see referenced guide.
Executive Summary	In listing cross-sectoral issues, the link between energy access/generation and energy efficiency is insufficiently acknowledged and explored; for example the energy efficiency of community energy provision solututions (including with an explicit focus on the gendered dimension of energy poverty) could be highlighted further, through both public and private provision.	Heinrich Böll Foundation Washington, DC	Already covered, please see referenced guide.
Executive Summary	Energy reduction: A clearer position towards energy reduction would be appreciated: "offsetting energy demand growth" might contain ambiguous interpretation. We would prefer wording towards an absolute reduction of energy demand: e.g.: "(…) reducing energy-related CO2 emissions and energy demand." See IEA 2021, NZE by 2050, Figure 2.5 (https://iea.blob.core.windows.net/assets/deebef5d-0c34-4539-9d0c-10b13d840027/NetZeroby2050-ARoadmapfortheGlobalEnergySector_CORR.pdf)	Germany	Agreed in principle. We added energy demand reduction - besides offsetting energy demand growth - across the text.
Executive Summary	This can be complemented by mandatory periodic energy audits for large energy-intensive industrial enterprises, EE benchmarking and incentives for energy audits and adoption of energy management systems (ISO 50001 certification) at SME level.	GIZ	Agreed and revised in synergy with other comments. Benchmarking aspect is included. Mandatory periodic EE audits included in synergy with other feedback.
Executive Summary	In discussing the paradigm shifting pathway of "Enhancing 'space' energy efficiency", the focus is exclusively on "reducing emissions from energy consumption in heating, cooling, and lighting in industrial and commercial 'spaces'" as focus of GCF investments in this sector. It is not clear why EE investments in public spaces are seemingly excluded or not explicitly named, given the importance of the public sector building stock "space" for service provision and the important modeling function the public sector can provide (including with respect to public utility, public service centers such as cooling centers etc.).	Heinrich Böll Foundation Washington, DC	Agreed. Added this sub-sector for improved clarity.

Executive Summary	Why limited to commercial and industrial applications?	United States	Agreed and clarified. Focus here is on buildings and associated "spaces" across sectors (residential, commercial, industry). Residential sector and its multiple applications are mainly covered in 3rd pathway. All pathways are to be promoted.
Executive Summary	Consider including the "residential" in addition to industrial and commercial. The residential sector might be partially covered through the next pathway "highest efficiency appliances/equipment", although e.g. district heating and cooling systems wouldnt be covered, and they are critical for achieving energy efficiency improvements in space heating and cooling.	UNEP Copenhagen Climate Centre	agreed, updated.
Executive Summary	Misleading to characterize 'space' heating as also encompassing process heat. Industrial applications could be captured in the previous bullet point on "Scaling-up industrial energy efficiency"	United States	Corrected, thanks for highlighting.
Executive Summary	Space heating and cooling contribute to the highest end-use energy consumption in buildings (not in industry). In industry, the largest source of energy use is process heating. Buildings energy consumption generally refers to residential and commercial sectors energy consumption.	United States	Corrected, thanks for highlighting.
Executive Summary	Consider including the "residential" in addition to industrial and commercial.	UNEP Copenhagen Climate Centre	agreed, updated.
Executive Summary	Given the essential role of mandatory standards and labelling in EE improvement, Paradigm changing pathway 1 should be "Transformational Policymaking and Planning", instead of "Transformational Planning and Programming" to make it more clear	UNEP Copenhagen Climate Centre	No change required, as this is harmonised across GCF sectoral guides.
Executive Summary	Consider adding a sentence recommending proposals should explain and emphasize how their project will meet these criteria.	United States	Section 6 provide examples of how these criteria could peratin to the three paradigm shifting pathways.
Executive Summary	Capacity building and technical assistance for SMEs, energy auditors, ESCOs, technology suppliers and/or banks are often necessary to scale up EE financing and ensure significant impacts (for instance, regarding more complex thermal energy saving technologies for heating and cooling in industrial processes), depending on the country context. This could be highlighted here in the coalition and knowledge part.	GIZ	Agreed. Capacity building is specifically mentioned within the coalitions and knowlede part of EE pathways. See also Annexes that list specifics and TA resources for each pathway.
Executive Summary	In the table, “policy loans” are highlighted as a potential approach to mobilize finance at scale for the paradigm shifting pathway on “scaling up efficiency in energy-intensive industries”. The meaning and focus of such ‘policy loans’ is not further explained. However, the notion of policy loans seem to imply the potential application of policy conditionalities (presumably for a public sector sovereign borrower) for EE loans provided by the GCF. This is an MDB approach and not suitable for the GCF with respect to finance provision under the UNFCCC. This has to be clarified, and a reference to MDB-type policy loans should be deleted here.	Heinrich Böll Foundation Washington, DC	Policy-based loans are offered by various MDBs as a form of flexible, liquid funding to support policy reforms and/or institutional changes in a particular sector or subsector. Financial instruments are designed and approved as part of funding proposals, governened by the GCF board.
Executive Summary	For ‘Enabling market switch to highest efficiency appliance/equipment” the focus in the category “catalyzing climate innovation” is almost exclusive on “supply chains” and supply-side action, with very little focus and acknowledgement of a commensurate need for demand-side support. This reinforces the overly narrow focus of this guide on technologies and processes, instead of also giving adequate consideration to people/beneficiaries, including by focusing on the behavioral changes and incentives necessary to drive and transform existing and create new, more sustainable demand patterns for appliances, services etc. This is despite section 2.4 highlighting that the majority (55%) of emissions reductions under an IEA net-zero 2050 scenario are related to consumer choices. Obviously, with respect to demand-side considerations in developing countries, issues such as inclusion and equity, affordability, accessibility and technological appropriateness (is the highest technological solution, for example for appliances, always the best in terms of durability, user friendliness, cost effectiveness etc.) need to be also taken into account. The important interaction/trade-off between energy efficiency and energy access in developing countries, especially in SIDS, LDCs and African states, is not sufficiently acknowledged and addressed in the guide either.	Heinrich Böll Foundation Washington, DC	Agree, this is however part of detailed FP designs, relevant for all proposed potential actions.

Executive Summary	For ‘Enabling market switch to highest efficiency appliance/equipment” the focus in the category “catalyzing climate innovation” on innovating supply chains for market switch to high efficiency appliances should also take into account the fact that in LDCs, SIDS and African countries primarily most energy efficient appliances are imported although a more sustainable and country-ownership oriented approach could be to support local energy-efficient manufacture. Thus, the issue of required technology transfer and sharing is tantamount. Additionally, the sector guide does not acknowledge the energy efficiency gains coming from addressing and improving issues related to extended producer responsibility (EPR) of energy appliances, nor related issue of safe energy appliance waste disposal.	Heinrich Böll Foundation Washington, DC	Figure and linked text sections are further harmonised based on multiple comments.
Executive Summary	Comments related to "Mobilization of finance at scale" - Consider adding additional designs of financing programs such as leveraging national EE fund, utility DSM programs, setting up revolving funds, implementing bill financing, financial incentive programs, developing bulk procuremnt, financing early replacement of old technologies	United States	Figure and linked text sections are further harmonised based on multiple comments.
Executive Summary	Under Coalitions and Knowledge of Success, it is recommended that the GCF also include a point on disseminating best practices tailored to local contexts that address the gender barriers to accessing energy efficient solutions (e.g., energy efficient stoves). Canada would welcome the enhanced integration of gender-specific considerations throughout this guide.	Global Affairs Canada	Agreed, we added a possible action in the third EE pathway that highlights local contexts and vulnerable groups in society. Capacity building and people-centered aspects are strengthend across the text.
Executive Summary	The figure column transformational planning and programming doesn't capture the introduction of one regulation with high impact potential: The introduction of mandatory energy audits with mandatory implementation of the reccomendations of the audit which have a reasonable return of investment. The mandatory audit can be phased in over time targeting the largest consumers at first with a decreasing threshold over time.	UNEP Copenhagen Climate Centre	Figure and linked text sections are further harmonised based on multiple comments.
Executive Summary	Consider incorporating district heating and cooling in column transformational planning and programming / row Enhancing space energy efficiency.	UNEP Copenhagen Climate Centre	Figure and linked text sections are further harmonised based on multiple comments.
Executive Summary	Consider inserting '(e.g. ESCOs)' after ‘service models’. under Mobilization of finance at scale for efficiency in energy-intensive industries (like it is already inserted in the field below concerning ‘space’ EE).	UNEP Copenhagen Climate Centre	Figure and linked text sections are further harmonised based on multiple comments.
Executive Summary	The Transformational Planning and Programming column focuses on hardware and neglets the operational efficiency, maintenance, and regular energy audit and energy management for keeping the energy performance high during a product/building/industruial facility's use life. The Mobilizing Finance at Scale column does not include such important financing models as Green/climate bonds, revolving fund, and on-bill financing/repayment. When carrying out EE improvement, new constructions and retrofit face different barriers and need different solutions. The Guide does not distinguish new constructions and retrofit both in barrier identification and solutions.	UNEP Copenhagen Climate Centre	Figure and linked text sections are further harmonised based on multiple comments.
1.1	What are the eight result areas? They are referenced multiple times in this paragraph, but are not explained.	United States	Footnote added "GCF´s eight result areas are: Energy generation and access; Transport; Buildings, cities, industries, and appliances; Forests and land use; Livelihoods of people and communities; Health, food and water security; Infrastructure and built environment; and Ecosystems and ecosystem services."
1.1	In Table 1, I would also include cooling under "Health and Wellbeing" which is particularly relevant given recent heat waves and related impacts to human health.	United States	Agreed. Added a point on the respective pathway in the health & wellbeing guide.
1.2	Please add reference to the concept of energy poverty as we also recalled in the sectoral guidance on “Energy Access”. An energy poverty approach includes all basic household energy needs. By including all household energy needs that are required for improved health and well-being, the energy poverty approach recognizes the reality that different energy services are required by households. While SDG7 focuses on access to electricity and clean cooking, equally as important to maintain basic health is the ability to control indoor temperature (heating and cooling) especially under extreme temperature cases. Making the best use of energy services requires an additional ability by households over time to (a) afford energy-efficient appliances and (b) maintain and improve the energy-efficient integrity of their housing structures or dwellings.	Italy	Beyond scope, various fuels and energy services are already covered. Please refer to the sectpral guidance on "Energy generation and access", "Cities, buildings, and urban systems" and "Health and well-being".
2. Global Context	See comment above on "offsetting energy demand growth." (Line 70-71)	Germany	Agreed in principle. We added energy demand reduction - besides offsetting energy demand growth - across the text.

2.1	In highlighting and discussing some of the adaptation potential of energy efficiency, the discourse (``the business case") is solely on energy-efficient infrastructure systems, instead of also acknowledging the need for a more beneficiary/people-centric understanding of the correlated adaptation relevance.	Heinrich Böll Foundation Washington, DC	Agreed, this is further highlighted. Minor revisions within the paragraph on social and environmental aspects.
2.2	Reference recently published IPCC AR6 Mitigation (2022) - Building and Industry Chapters	United States	Thank you. Various references are added and text sections updated. IPCC 2022 report is now included.
2.2	The link between GDP growth and emissions growth is referenced, but not explained.	United States	References updated, text revised.
2.2	This sentence needs to be better linked with the previous one to highlight the focus on energy efficiency goals. These two sentences talk about both NDC goals overall and EE targets, but the distinction is not always clear.	United States	Agreed. References are updated and the sentence is rephrased.
2.2	This section acknowledges that a growing number of people around the world, particularly across developing countries, will be exposed to heat stress, and that more than 1 billion people worldwide currently lack access to sustainable cooling solutions, with significant implications for public health, food security, productivity, and economic growth. It is recommended to also acknowledge the disproportionate impacts of this issue felt on people in vulnerable situations within developing countries, including women and girls, to avoid applying one size fits all solutions.	Global Affairs Canada	Agreed. We added a reference to a recent UN Women Covid19 report that can provide further lessons learned for vulnerable groups, including women/girls, and disparities within and across countries.
2.3	The reference to 'adaptation' in the sectoin title is misplaced here. In addition to energy efficiency typically being linked with mitigation, not adaptation, the rest of this section is clearly focused on mitigation.	United States	GCF aims to encourage the implementation of ambitious EE pathways, including adapation and mitigation opportunities. Adaptation sections are reviewed across the guide to avoid misunderstanding.
2.4	for example 363 combining the transition to lower GWP refrigerants under the Montreal Protocol with appliances/equipment re-design and replacement and 364 a switch to renewable power supply, transmission and distribution systems. To this end the GCF should continue to engage with the Montreal Protocol Multilateral fund to share information on policies, projects and relevant funding modalities relating to maintaining and/or enhancing energy efficiency while phasing down HFCs, [The MLF Sec was also directed to do this at excom] It may also be useful to add this to the section 4.3 on co financing.	International F-gas and ODS policy (Montreal Protocol) , Defra	Agreed, GCF´s mandate includes cooperations. Montreal Protocol and its Kigali Amendment are included as examples, where relevant. Footnotes are added for these new definitions.
2.4	Do you mean "material efficency" instead of "industrial material"? Industrial material refers to material used for industrial purposes not material production	United States	Indeed. Thanks for highlighting this.
2.4	The GCF is for developing countries. The data in Section 2 are global. Is there any data on EE potential and investment needs for developing countries?	UNEP Copenhagen Climate Centre	Agreed. References are further update, among these are a a global clean energy investment report for emerging and developing countries.
Paradigm Shifting Pathways	It is not clear how the concept of carbon sequestration mentioned in Figure 4 could be an outcome of an energy efficiency innovation.	Global Affairs Canada	Indeed. Thanks for highlighting this. Corrected to avoid confusion (this is not applicable for EE here, e.g. CCUS in industry not in focus).
Section 3	The emission reduction potential in the transport sector is at least 3.6 times larger than that of buildings, and there are more project and financing gaps in transport EE project design and implementation. Why then is there no separate paradigm shifting pathway for the transport sector?	UNEP Copenhagen Climate Centre	Beyond scope. See GCF low emission transport sector guide and its pathways: Pathway 1. Accelerating the shift to low emissions public transport; Pathway 2. Rapidly electrifying transport system and Pathway 3. Supporting scale up of new generation zero-emission fuels.
3.1	Figure 4 lists as desirable outcomes of the pathway for "Catalysing rapid market switch to highest efficiency appliances/equipment" the "value of physical assets made more resilient to the effects of climate change and/or more suitable to reduce GHG emissions". This is a misleading/misguided outcome indicator, as this would encourage a bias towards cost-intensity of approaches/ price of supported equipment over effectiveness for beneficiaries or scale/efficiency of emissions reductions. It would be important to also consider the appropriateness/including cost-effectiveness and ease of application (including replicability in less than ideal environments and with limited human capacity) of proposed technological approaches.	Heinrich Böll Foundation Washington, DC	Beyond scope. Refer to GCF cirtieria for financing at the level of FPs.

3.2	In this sentence, and previous references, two of the three examples listed as supporting the pathway are more linked to 'carbon intensity' than 'energy efficiency'.	United States	Energy efficiency is used in a systemec perspective (including material and resource efficiency as appropriate) to ultimately result in a lower carbon intensity (and actual, direct carbon emission) reductions. Energy, material and resource efficiency scope is strenghtened across the text.
3.2	Consider including barrier in regulation for entering in long term contracts e.g. with ESCOs for the public sector. This is a barrier in several countries where public entities have limits for entering into contracts beyond their annual budgets or reluctance to enter into contracts beyond political terms. Consider including lack of awareness / trust in alternative off-balance sheet financing options e.g. through ESCOs.	UNEP Copenhagen Climate Centre	Thank you. Added as follows: "Moreover, unclear third-party contract terms, e.g. non-standardised, unbalanced risk allocations for EE services offered by ESCOs to public entities, frequently prevent efficient and effective implementation of EE measures at scale."
3.2	Under 'Industrial development policy and market uncertainty', consider inserting 'the general absence of energy audit requirements in most countries and particularly the absence of mandatory implementation of efficiency improvement recommendations' as a significant policy barrier.	UNEP Copenhagen Climate Centre	Updated. Mandatory standards and an enhanced focus on implementation is included throughout the text.
3.2	Consider deleting the barrier 'Lack of awareness on bankability of emerging technologies'. It is a general misconception that energy efficiency rests on emerging technology. Variable speed motors is no longer an emerging technology and yet its adoption holds the potential to reduce global emissions by 10% (IEA). Any production facility may benefit from changing its pumps to highly efficient pumps without having to embark on energing technologies. By stating that lack of awareness of emerging technologies may be a barrier, the guidance is at risk of perpetuating a misconception that emerging technologies are central to energy efficiency. They are not at all.	UNEP Copenhagen Climate Centre	Apprears to be a misunderstanding of the first pathway. Motors (as equipment) is rather pathway 3 - here the focus is on decarbonisation of heavy industry via new production / manufacturing processes and technologies. Finetuned the paragraphs to highlight industrial scale and applications (not equipment).
3.2	Consider introducing a new barrier: 'Lack of a financially strong supplier base for energy services': Industrial enterprises not only lack the focus on energy efficiency potentials; they also lack the expertise to identify the potentials and pursue implementation. They require a supplier base for energy services, commonly the Energy Service Companies (ESCOs). In developing countries, ESCO are considered a source not only of expertise, but also of financing on the basis of Energy Performance Contracting. The ESCOs, however, have severe difficulties in raising capital to finance the retrofits on behalf of their clients, because financiers are unfamiliar with their business model.	UNEP Copenhagen Climate Centre	Apprears to be a misunderstanding of the first pathway. Motors (as equipment) is rather pathway 3 - here the focus is on decarbonisation of heavy industry via new production / manufacturing processes and technologies. Finetuned the paragraphs to highlight industrial scale and applications (not equipment).
3.2	Under 'Capital scarcity to finance innovations for technology change in nascent markets', consider deleting the reference to general disfavourable risk assessment in nascent markets, which is not particular to energy efficiency, but a general challenge to lending in these markets'. Consider instead inserting that 'in nascent markets for energy efficiency, the overall investment calculus is distrusted for efficient technologies, where high capital costs are a certainty, but low operational costs is a promise that is not yet backed by experience.' Training of industry professionals and local financiers is a very long term and continuous effort. Development of finance criteria for GCF participation can undoubtedly accelerate the process.	UNEP Copenhagen Climate Centre	Appears to be a misunderstanding of the first pathway.
3.2	In Table 3 and in ES-1, electrification and green hydrogen are called out as an industrial energy efficiency strategy. I'm not clear on why these are the two specific strategies called out. GCF should have a broad definition for process changes and demand-side management strategies in the industrial sector that could result in more efficient heating/cooling, but not pick any winners by only mentioning specific technologies (e.g. hydrogen, etc.). For example, Hydrogen could be a feedstock solution or an energy storage/carrier solution but it is not necessarily the most efficient or cost-effective option for industrial sectors currently.	United States	Sectoral, technological and fuel-specific choices are beyond scope. As highlighted in the various pathways, material, fuel, and process changes are all required. Green hydrogen and electrification of industries are examples highlighted by IEA and IRENA for a globally significant, near-time, large-scale industry decarbonisations, primarily for manufacturing. Deleted the heating and cooling reference to avoid misunderstanding.

3.2	Under Transformational planning and programming. Consider the introduction of mandatory energy audits with mandatory implementation of the reccomendations of the audit which have a resonalble return of investment. The mandatory audit can be phased in over time targeting the largest consumers at first with a decreasing threshold over time.	UNEP Copenhagen Climate Centre	Agreed, added.
3.2	Under Catalizing climate innovation, "Demonstrating anchor investments in new breakthrough high risk and high potential business models e.g. by creating an enabling environment for the development of a market for Energy Service Companies (ESCO) to generate investment proof points for industrial energy efficiency in developing countries."	UNEP Copenhagen Climate Centre	Disagree. Already covered. No need to highlight ESCOs here, there might be alternative business models too.
3.2	While it is good that junior equity finance was considered for early-stage technology adoption in the industrial sector, financing interventions in both the industrial and "space" EE pathways are still largely reliant on debt finance, which most markets have demonstrated as being unable to scale-up EE finance especially through market players such as ESCOs. The GCF Strategic Plan needs to include innovative financial structures that flow equity capital as well to projects, and through project aggregators such as funds, equity vehicles and super-ESCOs. If equity finance is better articulated as an alternative or complement to debt finance, then GCF interventions should be directed toward removing barriers faced by equity investors (and not just financial institutions).	UNEP Copenhagen Climate Centre	Noted. Beyond the scope of the guide - this is not a discussion of the GCF strategic plan. Equity remarks unclear.
3.2	Under Mobilization of finance at scale, consider deleting the reference to 'breakthrough technologies' as the (only) target for scaled-up finance. Finance is needed for fundamental, market proven energy efficient technology as well, particularly in markets targeted by GCF.	UNEP Copenhagen Climate Centre	Disagree, there appears to be a misunderstanding of the scope and ambition of the 1st pathway.
3.2	Consider adding a new bullet point: • Channeling junior equity, loans and guarantees through financing models and fund structures targeted at the energy service providers in order to capitalize and strengthen the ESCO supplier base and scale-up performance based financing. (Motivation: financing of energy efficiency in LDCs/SIDS, as well as in other developing and emerging economies, falters because projects are relatively small, disbursed on several (commonly known) technologies and difficult to collateralize. A project by project approach in the financing sector is in itself preventing scale-up. Financiers must become comfortable to lend to intermediaries like ESCOs, that act as aggregators of many projects and align their business with the performance of their proposed solutions).	UNEP Copenhagen Climate Centre	Disagree. Various business models are required. Beyond scope - this is to be evaluated at the level of a funding proposal.
3.2	De-risking tools such as guarantees and energy saving insurance should be included for industrial energy efficiency, in the same way as they are for "space" EE interventions, since ESCO and energy performance contracting are equally relevant for industrial energy efficiency.	UNEP Copenhagen Climate Centre	Larger industrial companies will often manage industrial EE internally and include this within their products and services, especially energy intensive industries. There is no one-size-fits-all ESCO solution relevant for all pathways in all countries.
3.2	"Coliation and Knowledge to scale up success" does not cover such important measures as regional standards and labelling, EE testing labs and facities, education and training for relevant professionals (energy auditors, energy managers, energy planners etc.) for EE actions.	UNEP Copenhagen Climate Centre	Disagree, this is already covered as part of knowledge exchange. See the long list of resources proved in the Annex. Specific measures to be designed within FPs.
3.2.1	As long as energy distribution and storage are linked to energy efficiency along the supply chain, as already highlighted in the “Cities, buildings and Urban Infrastructure Sectoral Guidance”, it is important to link here also the concept of the implementation of smarter and digital power infrastructure systems. This is critical for the acceleration of the energy transition by ensuring a seamless and optimized interaction of electricity system elements on both the supply (e.g. DG, RES and storage) and demand (e.g. energy efficiency, DSR, EV) sides. This could be relevant, for example, for the part related to “Catalyzing climate innovation” in reference to demonstrating technology innovations in critical energy- and resource-intensive manufacturing value chains in developing countries.	Italy	Agreed, catalyzing climate innovation is part of the possilbe actions across pathways. Further examples for technology innovation, including digitalisation. are given throughout the guide and in its annexes. Referenes to the "Cities, buildings and Urban Infrastructure Sectoral Guidance” are already covered.

3.2.1	Not clear whether it would fit better here or under the other paradigm shifting pathway related to “space energy efficiency”; however as for the part regarding “Catalyzing climate innovation”, the IEA 2021 World Energy Outlook emphasizes that much stronger policies on end-use energy efficiency in the Net zero emission by 2050 scenario (NZE) reduce emissions by about 1.3 Gt CO2 in 2030, compared with the APS, and are of particular importance in the transport and buildings sectors. Almost 80% of these additional energy efficiency gains in the NZE could be achieved cost-effectively over the next decade. Avoided demand through measures such as digitalisation and materials efficiency reduce emissions in the NZE by a further 1.3 Gt by 2030: much of the potential here is in the industry sector, where opportunities for materials efficiency are substantial and low emissions technologies are less mature than in most other sectors. Behavioural changes contribute around another 1 Gt by 2030 to the additional emissions reductions in the NZE, notably in the transport sector. Stronger standards for appliances and fuel economy are instrumental in achieving these efficiency gains in the NZE, as is a stronger policy emphasis on materials efficiency in industry. In the buildings sector, the number of building retrofits would need to increase two-and-half-times compared with announced pledges to close the gap; this is particularly important in advanced economies. Energy efficiency measures such as retrofits and appliance standards also save about 0.5 Gt of indirect CO2 emissions outside the buildings sector, largely by reducing electricity demand.	Italy	Thank you. Agreed. References in the context chapter are updated, integrating various comments. Innovative topics (digitalisation, smart IoT systems, material and resource efficiency) are highlighted across the guide.
3.2	Against the driver "Transformational planning and programming", additional possibe action could be "promotion of energy management system, based on ISO50001:2018"	Private Financing Advisory Network (PFAN) & the National Bureau of Asian Research (NBR)	Agreed. Added and adjusted for energy intensive industry (1st pathway).
3.2	In the table, “policy-based loans” are highlighted as a potential approach to mobilize finance at scale for the paradigm shifting pathway on “scaling up efficiency in energy-intensive industries”. The meaning and focus of such ‘policy loans’ is not further explained. However, the notion of policy loans seem to imply the potential application of policy conditionalities (presumably for a public sector sovereign borrower) for EE loans provided by the GCF. This is an MDB approach and not suitable for the GCF with respect to finance provision under the UNFCCC. This has to be clarified, and a reference to MDB-type policy loans should be deleted here.	Heinrich Böll Foundation Washington, DC	Policy-based loans are offered by various MDBs as a form of flexible, liquid funding to support policy reforms and/or institutional changes in a particular sector or subsector. Financial instruments are designed and approved as part of funding proposals, governened by the GCF board.
3.2	As possible actions for “transformational planning and programming” the development of National Energy Efficiency Action Plans (NEEAPs) are mentioned. It is not clear, 1) how they would relate to NDCs?; 2) whether the guide suggests that GCF funding in support of public policy processing would then encourage the development of such NEEAPs (for example via RPSP). Are NEEAPs widely used outside of developed countries (the EU)? Who currently funds their development in recipient developing countries?	Heinrich Böll Foundation Washington, DC	National energy efficiency targets are frequently articulated, reviewed and updated in National Energy Efficiency Action Plans (NEEAPs), independent from the world region (and including the EU). This is a widely used national tool for a sectoral programming and planning process - and thus linked to high-level NDC targets in the context of developing countries. Within Europe, the Energy Efficiency Directive requires all EU Member States to adopt a number of specific policies, to prepare every 3 years a National Energy Efficiency Action Plan (NEEAP) and to report annually to the EU Commission on the energy savings achieved. For more details, kindly consult the "Guidance for National Energy Efficiency Action Plans Accompanying the document COMMISSION IMPLEMENTING DECISION establishing a template for National Energy Efficiency Action Plans under Directive 2012/27/EU of the European Parliament and the Council" accessible here: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52013SC0180&from=EN

3.2	It is not clear why the “Enhancing ‘space’ energy efficiency pathway” focuses only on industrial and commercial spaces and neglects public spaces; it should be very clear that such related GCF investments cannot just kept exclusively for private sector engagement, but that there is an important public sector investment applicability (and corresponding GCF obligation to support the public sector to improve ‘space’ EE) as well.	Heinrich Böll Foundation Washington, DC	Agreed. Added this sub-sector for improved clarity.
3.2	Include barrier of split incentives between owner and user of the asset/space.	UNEP Copenhagen Climate Centre	Already covered.
3.2	The table explicitly refers to ‘promoting new private-sector driven technology-agnostic energy efficiency approaches. This is open ended and dangerous, as it does not seem to exclude extending the life-span of fossil-fuel driven private sector industrial processes (versus an explicit switch away from fossil fuels). Instead, the draft guide should suggest potential restrictions or no-go areas for technologies perpetuating continued fossil fuel reliance. For example “cleaner coal” is more energy efficient coal application; nevertheless, this should not be an approach supported by the GCF as a green fund in the name of energy efficiency.	Heinrich Böll Foundation Washington, DC	Beyond scope of the guide. Technology and system designs and choices are part of funding proposals. GCF investment criteria need to be respected.
3.2	Under Catalyzing climate innovation, consider specific mentioning of Energy Service Companies (ESCOs), as their business model is congruent with 'promotion of private-sector driven technology-agnostic energy efficiency and service-based business models.	UNEP Copenhagen Climate Centre	Already covered.
3.2	Further under Catalyzing climate innovation consider deleting reference to LDCs and SIDS, as this comes through as a limitation in the applicability of this possible action, whereas it is indeed applicable and very relevant in all of GCFs target countries.	UNEP Copenhagen Climate Centre	Agreed.
3.2.2	Under the part related to transformational planning and programming, we support actions related to a) scaling zero-carbon building design codes with ambitious energy efficiency and material reuse standards, labels, and certificates in nascent markets and b) strengthening and enforcing building-level energy efficiency driven adaptation/resilience measures by climate adaptation/resilience specific laws and regulations for public and commercial “spaces”. We believe energy efficiency in building stocks should always be viewed as the starting point and should be considered the top priority intervention compared to other ones. This is also linked to the sectoral guidance on “cities, buildings and urban infrastructures”, where it was outlined how smart buildings can enable efficient production and use of renewables at house, district or city level tackling the twin challenges of the green and digital transitions together. This deeply connects with the heating/cooling factor as a step necessarily subsequent to a smarter energy distribution.	Italy	Thank you, well noted. Please refer also to the Cities, buildings and urban systems guide.
3.2.2	Under the part related to transformational planning and programming, for the following action, in order to ensure consistency with the international legally binding obligations, there is a fundamental need to make reference that they will be in line with the provision of the Montreal Protocol and its Kigali Amendment. See amendment as follows: - Integrating National Cooling Action Plans (NCAPs) and climate adaptive heat action plans with national infrastructure strategies and short-term targets, that take into account and are in line also with the provision of the Montreal Protocol and its Kigali Amendment.	Italy	Thank you. GCF´s mandate includes institutional collaborations. Added a reference to international standards and regulations, such as the one cited.
3.2.2	In the part related to “coalitions and knowledge to scale up success”, there is a fundamental need and opportunity to cooperate with the Multilateral Fund for the implementation of the Montreal Protocol (MLF) to maintain and/or enhance energy efficiency while phasing down hydrofluorocarbons (HFCs) as refrigerants in the Refrigeration, Air Conditioning, Heat Pump (RACHP), mobile air-conditioning (MAC), industrial and commercial refrigeration (ICR) and industrial foam sectors. This is a specific effort agreed also by the Parties to the Montreal Protocol in the context of the Kigali Amendment, which was also followed-up with the decision XXX/5 paragraph 7 of the 30° Meeting of the Parties, which requested “the Executive Committee of the Multilateral Fund, in dialogue with the Ozone Secretariat, to liaise with other funds and financial institutions to explore mobilizing additional resources and, as appropriate, set up modalities for cooperation, such as co-funding arrangements, to maintain or enhance energy efficiency when phasing down HFCs”.	Italy	GCF´s mandate includes institutional collaborations. Montreal Protocol and its Kigali Amendment are included as examples. Footnotes are added for these new definitions. See other comments on the Montreal Protocol.

3.2	Under “mobilization of finance at scale” more clarity is needed on what is meant by “energy efficiency as a service” business models – is this referring to private sector “results-based” financing approaches with financial provision, and conditions of financial instruments pegged to EE outcomes? Some more clarity (f.ex. an annex explaining some of the proposed financing approaches) would be helpful.	Heinrich Böll Foundation Washington, DC	EE business models, including EE services, discussed throughout the guide can be driven by both public and private sector entities, such as ESCOs. EE services are typically measured and are results-based. Specific financial designs are country and proposal specific, thus beyond scope here.
3.2	In Table 5, building design codes are mentioned as a driver a for a paradigm shift in enhancing "space" energy efficiency. However, this seems to be the only place where building codes are mentioned. Historically, United StatesID has focused on MEPS and equipment standards but is increasingly looking at implementation of building codes as a key driver for uptake of insulation, HVAC, and other building equipment upgrades in residential, commercial, and government buildings. I would encourage GCF to explicitly call out building code implementation throughout the guide	United States	Agreed. Enforcement aspects are highlighted in regulatory barriers. Building code implementation is highlighted as a possible action.
3.2.2	The draft guide implicitly and explicitly (line 465, Table 5) focuses on industrial/private sector energy efficiency (EE) with a “technology-agnostic” approach. This is dangerous. Nowhere in the draft guide is there a discussion about the suitability of pursuing EE in fossil-fuel driven industrial infrastructures as a way of extending the life-span of those fossil-fuel driven industrial processes (versus an earlier switch away from fossil fuels). The potential trade off of encouraging more “energy efficient” fossil fuels through GCF investments, and thus prolonging continued fossil fuel reliance as a potential danger is not considered. Such a guide should include a frank discussion of the such trade-offs for careful considerations, while outlining restrictions or no-go areas. For example “cleaner coal” is more energy efficient coal application; nevertheless, this should not be an approach supported by the GCF as a green fund in the name of energy efficiency. It is imperative that efforts toward energy efficiency not be used to prolong the use of fossil fuel infrastructure at the expense of investing in renewable energy.	Heinrich Böll Foundation Washington, DC	Beyond scope.
3.2.3	For ‘Enabling market switch to highest efficiency appliance/equipment” the focus in the category “catalyzing climate innovation” is almost exclusive on “supply chains” and supply-side action, with very little focus and acknowledgement of a commensurate need for demand-side support. This is despite the fact that Table 6 explicitly references a ‘lack of social acceptance” (including ability and willingness to pay) as a significant barrier to realizing the paradigm shift, including by suggesting “user-centric business models that allow affordable services to the recipients and matches their (individual” cash flows.” Despite this analysis of core barriers for the envisioned shift, the suggested possible actions in Table 7 do not include actions and the transformational potential of demand-side support and behavioral changes. As the GCF funds in developing countries, for supply to be matched by demand, issues such as inclusion and equity, affordability, accessibility and technological appropriateness (is the highest technological solution, for example for appliances, always the best in terms of durability, user friendliness, cost effectiveness etc.) need to be also taken into account in proposing possible actions for this paradigm shifting approach, including by better articulating the link with and the potential trade-off between energy efficiency and energy access considerations, especially for a large segment of the “consumer base” in SIDS, LDCs and African states.	Heinrich Böll Foundation Washington, DC	Disagree. The guide, in line with other sectoral guides, can only provide generic GCF ESS guidance and examples for potential actions. Specific project designs, including ESS considerations, are part of FPs.
3.2.3	In terms of discussing “insufficient data and market linkages”, a reference is made related to the need to make EE investment decisions at “highly granular level” such as on a “household” or “SME” level. Here, the reference should be on “MSMEs” instead of “SMEs”. The micro-enterprise sector (both formal and informal) is crucial for paradigm shift in energy efficiency in recipient developing countries. Within the draft EE sector guide, all references to “SME” throughout the guide should be replaced by references to “micro-, small- and medium-sized enterprises (MSMEs). This is also applicable to mentions in lines 770, 821, 957, 850.	Heinrich Böll Foundation Washington, DC	Agreed. Updated.
3.2	Large-scale bulk procurement and distribution programs can be an effective way to quickly wash out low-efficiency products in the market and drive down bulk and retail prices of efficient products. These types of interventions could be articulated as a possible GCF interventions as well. To the long list of financing options, credit card finance and equipment leasing should also be considered.	UNEP Copenhagen Climate Centre	Partially agreed. Examples are naturally a non-exhaustive list. Leasing appears more widely applicable - access of end-users to credit cards might be limit in certain contexts. Funding proposal scope. Added this topic in another sub-section.

3.2	Against the driver "mobilization of finance at scale", additional possibe action could be "using Super ESCO to ensure bulk procurement to reduce cost and apply innovative business model and ensure performance monitoring". Note: large scale transformation would be possible if Super ESCO provides support to the household consumers.	Private Financing Advisory Network (PFAN) & the National Bureau of Asian Research (NBR)	Super-ESCO business models are highlighted in the 2nd pathway. Bulk procurement is not a financial instrument, it is added as a topic for knowledge exchange in the 3rd pathway.
3.2	Under 'Scaling up efficiency…' as well as under 'Enhancing 'space' energy efficiency, 'service models' are mentioned separately as if a service model is a solution in itself. Market experience shows that it is not. The representation in the table indicates that service models may be adopted in parallel to equity, policy loans and EE credit lines, de-risking tools and energy saving insurance, not necessarily integrated. It is essential, however, that these are not seen as disconnected initiatives. Commonly, ESCOs that provide the service models are (legally) excluded from using other instruments, thus leaving them to compete against such other initiatives. These instruments must be integrated with the service models, allowing ESCOs to benefit from equity, de-risking tools and energy saving insurance, integrating such initiatives with the active scale-up of energy efficiency financing through ESCOs. Consider how this may be reflected in the table.	UNEP Copenhagen Climate Centre	Disagree, already covered. Various business models are required. See responses to other ESCO specific comments and responses.
3.2	In the table, "policy-based loans" are highlighted as a potential approach to mobilize finance at scale for the paradigm shifting pathway on "scaling up efficiency in energy-intensive industries". The meaning and focus of such 'policy loans' is not further explained. However, the notion of policy loans seem to imply the potential application of policy conditionalities (presumably for a public sector sovereign borrower) for EE loans provided by the GCF. This is an MDB approach and not suitable for the GCF with respect to finance provision under the UNFCCC. This has to be clarified, and a reference to MDB-type policy loans should be deleted here.	Heinrich Böll Foundation Washington, DC	Policy-based loans are offered by various MDBs as a form of flexible, liquid funding to support policy reforms and/or institutional changes in a particular sector or subsector. Financial instruments are designed and approved as part of funding proposals, governened by the GCF board.
Figure 4	Against "scaling up energy efficiency in energy intensive industries", under "transformational planning and programming", Promotion of energy management system, based on ISO 50001:2018, could be included.	Private Financing Advisory Network (PFAN) & the National Bureau of Asian Research (NBR)	Agreed. Added and adjusted for energy intensive industry (1st pathway).
Figure 4	Against "enabling market switch to highest efficiency appliance/equipmnet", under "Transformational planning and programming", first point could be "establishing energy standards and labeling regulations specifying MEPS for different appliance with the option for updating MEPs over time"; It could be folowed by the options listed in the document.	Private Financing Advisory Network (PFAN) & the National Bureau of Asian Research (NBR)	Agreed, strenghtened language on enforcement and implementation thoughout the text.
Figure 4	Against "enabling market switch to highest efficiency appliance/equipmnet", under "mobilization of finance at scale", one more option could be "using Super ESCO to ensure bulk procurement to reduce cost and apply innovative business model and ensure performance monitoring". Note: large scale transformation would be possible if Super ESCO provides support to the household consumers.	Private Financing Advisory Network (PFAN) & the National Bureau of Asian Research (NBR)	Agreed, text is further harmonised.
4.1	Excessive collateral requirements of banks for EE investments in industrial SMEs is the most challenging financial barrier, e.g., in Brazil and possibly also in other countries. Highly efficient industrial equipment is often tailor-made, very company specific and therefore more difficult to use as guarantee compared to other assets. Industrial EE projects usually encompass more than one type of equipment, which further increases the difficulty to use them as a guarantee. This could be included	GIZ	Agreed, high collateral requirements by banks, possible a result of (perceived) risks, are relevant across pathways. Added.
4.1	Pre-approval of technology is generally counterproductive to innovation and prevents the optimization of systems. Instead, it is essential to establish accreditation of energy service suppliers and ESCOs. Their interests are aligned with their clients' in optimizing the cost/performance ratio, not only of equipment, but of entire systems. However, an accreditation system is necessary to ensure the highest standard in the sector and provide confidence among banks and financiers that the best available technology, given the circumstances, is employed.	UNEP Copenhagen Climate Centre	Partially agreed. Added certification as another option. Business models and risk assessments of banks differ, this discussion is part of funding proposals.
	The Cooling Facility Programme presented an innovative financing model with blended		

Section 4	finance of GCF resources and co-financing through grants, loans and guarantees, as also recalled in section 5 “Case Studies”. Generally speaking, we agree that grant instruments are appropriate as funds to spark the initiation of a new climate-compatible pathway through short-term technical assistance, while other financing instruments are more appropriate to finance revenue-generating activities where paybacks are also foreseen.In line with the comments above and the need to ensure a cooperation between the Multilateral Fund for the Implementation of the Montreal Protocol and the GCF in the activities dedicated to enhancing “space” energy efficiency regarding in particular maintaining and/or enhancing energy efficiency while phasing down hydrofluorocarbon (HFCs), it is worth noting that assessment by the Multilateral Fund Secretariat and the Technical and Economic Assessment Panel (TEAP) of the Montreal Protocol shows that improving the energy efficiency of Refrigeration, Air Conditioning and heat Pumps (RACHP) equipment will result in benefits to the user of that equipment and to the country. Use of energy-efficient equipment will result in savings in energy consumption to the user on their premises and will result in cost savings in electricity/energy use. The payback period to the consumer would depend inter alia on the power consumption levels of the equipment in comparison with the baseline equipment replaced, United Statesge characteristics, including the way the equipment is installed and operated, and the price of electricity, as well as the impact of the price of electricity on the United Statesge pattern for the equipment, and would therefore vary by country. Further, the propensity of consumers to purchase energy-efficient products increases as electricity prices rise, and the rise in price can also change equipment United Statesge characteristics. While payback can make the adoption of energy-efficient equipment attractive and increase consumer demand for such products, reducing the cost of manufacturing energy-efficient equipment will facilitate its faster availability and adoption. Incentives such as low-cost financing schemes, innovative payment models involving energy providers/utilities, time-bound tax incentives for energy-efficient equipment, will help remove these barriers and facilitate expeditious adoption of energy-efficient equipment.	Italy	Noted and well agreed. Such measures are promoted across pathways and need to be specified in EE funding proposals.
4.2	Either in the financing barriers section or in this section, it would be good for the GCF team to suggest recommendations for financing solutions for public buildings (schools, hospital, administrative buildings, public housing). In many cases, public co-funding may be available but a lack of revolving fund-type mechanism preclude public sector (national, state, local) governments from sufficiently investing in EE retrofits and upgrades. Additionally, it would be good to connect to any municipal finance solutions present in the other GCF sectoral guides.	United States	Agreed. Added in barriers and drivers. Cross-check with cities guide.
4.2	GCF includes equity as a financial instrument that "can provide a capital base for operations and reduce investment risks for other investors. It even cites aggregators such as Super ESCOs as an investee of GCF equity. The linkage to each of the three pathways could be better articulated though. In the financial intervention of each pathway, on-balance sheet modalities such as bank loans seem to be the preferred instrument.	UNEP Copenhagen Climate Centre	Unclear comment. Already covered. Various financial instruments are mentioned and multiple examples are given - beyond bank loans.
4.2	Green hydrogen is not (necessarily) an energy efficiency investment. It is a fuel switch technology that requires energy conversion (electricity to hydrogen), implying a loss of 20-35% of the energy in the conversion. There are much more relevant and scalable energy efficiency investment potentials that would benefit from concessionality on loans, particularly in the most problematic sectors cement and steel, for instance electric arc furnaces to replace blanst furnaces. Consider to take out green hydrogen here and focus on less flamboyant technologies, thus also bringing this section in alignment with line 754. There is significant on-going private sector investments in green hydrogen (mainly in developed countries) that will drive down costs before GCF needs to get engaged.	UNEP Copenhagen Climate Centre	Technology agnostic presentation across the text is reinforced. Examples are given in line with the state of industrial developments and climate challenges. ESCOs might be more appropriate for other pathways - there might be a misunderstanding of industrial technologies, processes and markets. See other ESCO-specific comments.
4.3	"Leverage commercial finance" - Can public and private financing be included? Public financing such as energy efficiency funds that are set up by governments and private financing such as consumer covering a share of the incremental cost of more efficient equipment (eg: when they recieve rebates or subsidies to buy a specific tech (heat pump) that only cover part of its incremental costs compared to baseline tech?	United States	Agreed. Added as suggested.
4.4	In line with the comments above, it is essential that the GCF establishes a continued cooperation also with the Multilateral Fund for the implementation of the Montreal Protocol. This is also recalled in specific decisions of the Meeting of the Parties and the Executive Committee of the Multilateral Fund.	Italy	Noted, but beyond scope to make such forward looking institutional statements. GCF´s mandate includes institutional collaborations. Montreal Protocol and its Kigali Amendment are included as one example for country-specific planning. Footnotes are added for these new definitions.

4.4	Recommend ensuring the sectoral guide is complementary with related efforts in other multilateral finance mechanisms, including the Montreal Protocol's Multilateral Fund and the Global Environment Facility. This section is quite short, and could be strengthened by including more guidance on how complementarity can be achieved as well as how duplication will be avoided. Recommend citing the Long-term vision on complementarity, coherence, and collaboration between the GCF and GEF. Recommend adding the Multilateral Fund as a specific financial mechanism referenced in this section, given potential for complementarity.	United States	GCF´s mandate includes institutional collaborations. Montreal Protocol and its Kigali Amendment are included as example. Footnotes are added for these new definitions.
4.5	General comment on incremental costs in energy efficiency: The incremental cost principle is well understood and well established for climate change related investments. Traditionally, in a project lifetime perspective wind energy has been more expensive than coal or gas based power generation and thus came at an incremental cost compared to the alternative. In energy efficiency, however, there is (commonly) no incremental costs. The investments pay for themselves through savings on the energy bill. Indeed, the business model for ESCOs is that there must be 'negative incremental costs' - i.e. a profit on the investment compared to the baseline. An incremental costs approach is therefore irrelevant for the majority of energy efficiency investments. That, as is well acknowledged in this guidance document, does not mean that financing is accessible to market actors.	UNEP Copenhagen Climate Centre	Noted. Beyond scope.
4.5	Further, in many cases, if the energy efficient technology comes at an incremental cost, the reason can be found in energy subsidies. If lending is conditional upon incremental costs, it provides a perverse incentive to retain such energy subsidies.	UNEP Copenhagen Climate Centre	Noted. Beyond scope. Energy subsidies are already discussed in exec summary.
4.5	Overall, for energy efficiency investments, it is recommended that more effort is put into defining this as a particular asset class with an alternative assessment method for GCF financial participation that acknowledges that it is not the non-profitability (or incremental costs) of energy efficiency investments that justifies GCF intervention; it is the barriers in the financing sector and the difficulties in collateralization and in regulation that are the prime obstacles. As section 4.5 stands, it constitutes a conceptual challenge both for GCF and for the proponents wishing to engage GCF in energy efficiency investments.	UNEP Copenhagen Climate Centre	Beyond scope.
4.5	What about only "part of the incremental cost"?	United States	No change required, as specific GCF guidance is referenced. Beyond the scope of the guide, to be discussed within funding proposals and associated calculations.
Section 5	All the case studies are based on estimated emissions reductions. It would be useful to provide case studies where EE has been implemented and provide actual emissions reduced based on evaluation reports	United States	No evaluations yet available.
Section 5	Can you include examples of case studies where outcomes were challenged by implementation realities	United States	Beyond scope. No GCF evaluations for EE yet available. Learning from challenges and failures is appreciated, included via annexes for coalitions / networks.
Section 5	Emissions reduction should not only focus on direct emissions. Opportunties to reduce indirect emissions from industries such as textille, pulp and paper or food industries can lead to significant emission reduction especially in countries with emission intensive power system. These should be included.	United States	Agreed, the guide encourages a system-planning approach and a value-chain based analysis, that includes indirect emissions. A few more industry sector examples are included.
5.4	The comment sheet selection options do not include Sections 6 and 7. The contents on industry in Sections 3, 4, and 5 focus on energy intensive industries, especially steel, cement, and chemicals. While Section 6 mentions multiple times of SMEs. There seems to be a shift in scope.	UNEP Copenhagen Climate Centre	Thank you for highlighting this. The pathways cover indeed different target groups and beneficiaries. Already included.
Section 5	It would have been great to provide a better understanding of the implementation appraches "on the ground" of the different cases in terms of technologies and or implementation modalities. I.e. what kind of projects do the cases finance, what kind of regulation do they introduce, what kind of technical assistance is provided, how is the private sector involved and co-finance structred. An example using ESCO as implementation modality would have been great to illustrate how private sector action and finance can be leveraged.	UNEP Copenhagen Climate Centre	Noted. Case study presentations are harmonised across sectoral guides. Implementation details can be reviewed in linked funding proposals for each case study.

6.1	In discussion the application of the GCF investment criterion of “impact potential” to EE, the discussion should more clearly elaborate that the adaptation impact of energy efficiency projects is not just related to the strengthening of the resiliency of electric, district heating and cooling utility system, but primarily should focus on the resiliency of people as the core beneficiaries of such action (= people-centric, not system-centric justification). Also, while the reference to GCF environmental and social policies to safeguard against possible negative impacts of large-scale energy efficiency EE infrastructure developments and real estate developments is appreciated, explicit reference for compliance with the GCF Gender and Indigenous Peoples Policies should be included here.	Heinrich Böll Foundation Washington, DC	People-centric is added and a footnote and reference explains env / social impacts and the current GCF policy.
6.1	Rebound effects: Please also include safeguarding rebound effects to ensure efficiency measures contribute to overall energy reduction and address counter effects such as behavioural changes.	Germany	Agreed, rebound effect is now included in the main text. Science based definition added and referenced in a footnote.
6.2	General comment on Paradigm shift potential: It should be emphasized here that paradigm shifts are equally important in the framework conditions. It is, for instance, a defining parameter for the financial viability of energy efficiency investments that there are no energy subsidies competing against the investment. Investors with GCF backing should not compete against government subsidies. Energy subsidies and the abolishing thereof, however, seem to be entirely absent from consideration in this guidance document. Another much required paradigm shift in framework conditions is the discontinuation of the common exclusion of ESCOs from benefiting from energy efficiency support programmes or funds. Such energy efficiency funds may be set up with GCF funding, which thus implicitly could compete against the private energy service sector.	UNEP Copenhagen Climate Centre	Noted. Already covered. Specific designs are beyond scope here.
6.3 Sustainable development potential	Zero-carbon fuels: In ideal cases, energy efficiency may be combined with replacement of fossil fuels by zero-carbon fuels. This is currently not reflected. May be rephrasing might be helpful. Suggestion: “Environmental co-benefits include reduced local, regional, and global GHG and particulate emissions and resulting positive impact on local air, water, and soils quality through reduced energy demand. A combination with replacements of fossil fuels with zero-carbon fuels is rated positive.”	Germany	Already covered, "reduction or replacement of (imported) fossil fuels" is included. Pathways to move beyond fossil fuels are country specific and need to be discussed in funding proposals.
6.3	The discussion of “gender empowerment co-benefits” related to EE is insufficient. It is not about integrating women into “technology-focused energy-efficiency projects and programmes” as suggested here, but about ensuring that energy-efficiency projects-and programs are people-centered, and focus on gender-equitable and human-rights compatible outcomes for women, men and all gender-diverse marginalized communities. Guidance to potential project developers should not suggest that it is enough to ‘specify end-user categories” (line 832), but instead provide specific and targeted actions to benefit marginalized and discriminated end-user groups, developed in collaboration with these users (and this has to go beyond awareness raising and capacity building to focus on such beneficiary groups as right-holders and potential service recipient and consumers).	Heinrich Böll Foundation Washington, DC	People-centric is added. Detailed measures are beyond scope, these are pat of FPs.
6.4	Consider to include '(Owners of) energy service companies (ESCO) that provide services and investment on behalf of industrial clients'. It should be acknowledged that any concessional financing that goes directly to the owners of installations implicitly competes against an ESCO industry that tries to deliver its services on strictly commercial terms. As the ESCOs at the same time offer implicit scale-up opportunities they should as a minimum be considered at par with the industrial clients. The irony would be to establish energy efficiency programmes, including the promotion of energy services (ESCOs), which include financing programmes and facilities that compete against them.	UNEP Copenhagen Climate Centre	Disagree, various business models required, there are no one-size-fits-all solutions to every (complex) energy, material and resourece efficiency challenge. See other ESCO specific comments and responses.
6.4	Consider to include '(Owners of) energy service companies (ESCO) that provide services and investment on behalf of owners of such installations'. The same argument as above.	UNEP Copenhagen Climate Centre	Agreed. Updated ", (owners of) energy service companies (e.g. super-ESCOs) and technology providers that provide EE services and investment on behalf of public or private clients".
6.4	Consider that the drivers of investment in energy efficiency are commonly not a realized need on the part of the owner of inefficienct installations. Instead, it is the societal realization that energy efficiency uptake falls significantly behind, despite that most energy efficiency investments come with a profit. A demand may be stimulated for instance by regulation such as mandatory energy audits, without which most owners do not realize that they have alternative energy efficient options. Most interventions, therefore, are about creating a demand, not assessing it.	UNEP Copenhagen Climate Centre	Disagree, no one-size-fits-all solution across countries. Various policies, incentives, tools and approaches are usually needed. See also revisions on mandatatory EE audits.
6.5	Consider mentioning also energy service companies/providers (maybe to replace 'technology service providers)	UNEP Copenhagen Climate Centre	Agreed, added.

6.7	The draft guide highlights in references the importance of coalitions and networks to multiply the GCF's energy efficiency efficiency portfolio impact the importance of "open-source techno-economic and financial energy efficiency datasets". It would be important in this context also to stress the expectation that the GCF's financial contribution to data generation in the EE sector through both public and private sector engagement should result in publicly available "open source" data to encourage replication and joint learning. Specifically, GCF public finance provided for private sector EE investments should be made available as open source as part of the conditions for financing. Supported private sector actors should not be allowed to restrict access to related data generated with a reference to this being "proprietary business" data.	Heinrich Böll Foundation Washington, DC	Beyond scope. Part of legal / financial agreements for GCF funding proposals.