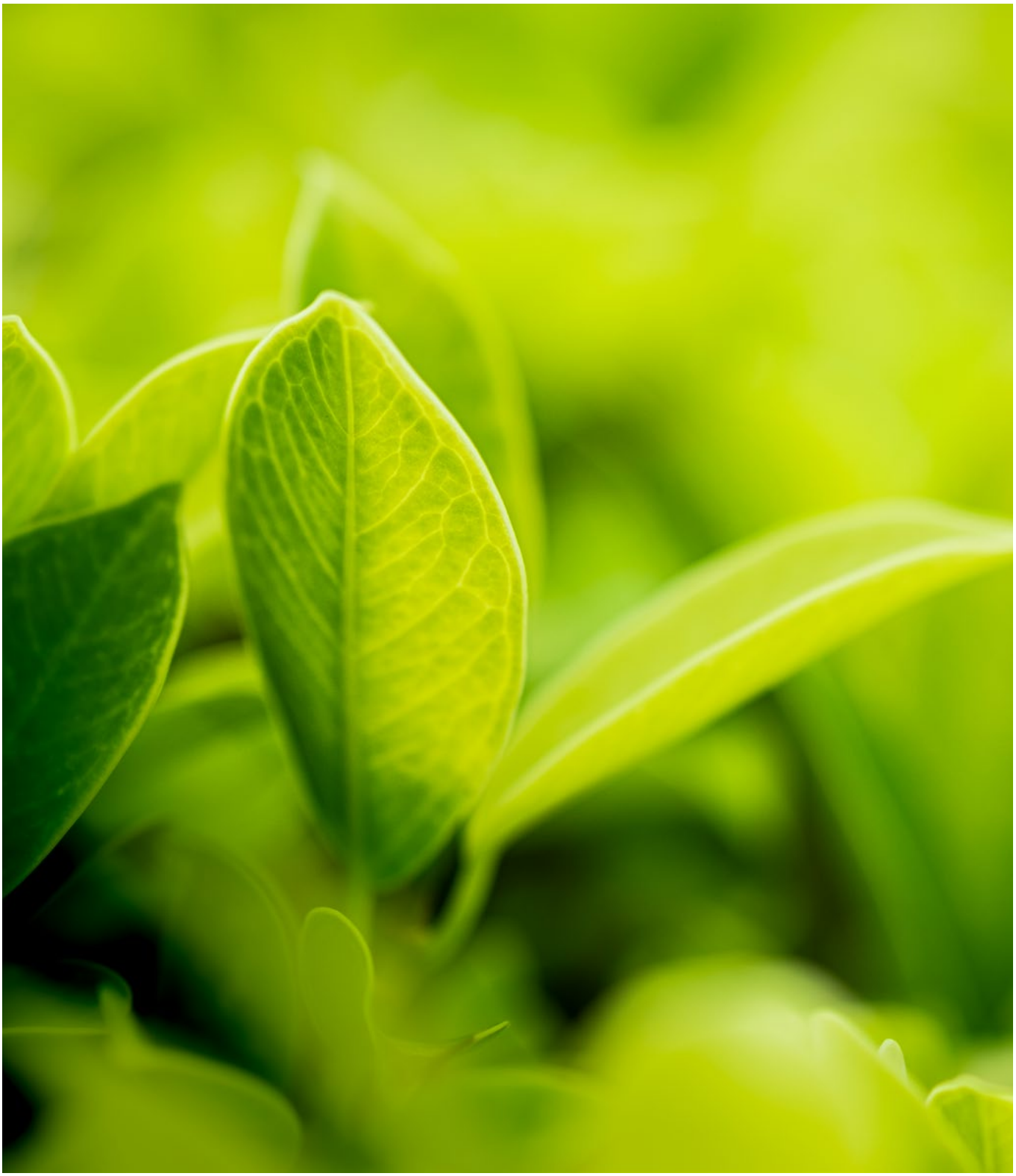

INVENTÁRIO DE EMISSÕES DE GASES DE EFEITO ESTUFA

ENEL DISTRIBUIÇÃO SÃO PAULO

INVENTÁRIO DE EMISSÕES DE GASES DE EFEITO ESTUFA

2020

Eletropaulo Metropolitana
Eletricidade de São Paulo S.A.

Nome fantasia: Enel Distribuição São Paulo

CNPJ: 61.695.227/0001-93

Endereço: Av. Dr. Marcos Penteado de Ulhoa Rodrigues, 939
5º andar - Torre Jatobá - Tamboré - Barueri - SP - 06460-040

INVENTÁRIO COMPLETO E VERIFICADO POR TERCEIRA PARTE

Responsável pelo Inventário:
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Unidade de Meio Ambiente da Enel Distribuição São Paulo

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Responsável pela verificação:
Mariana Fellows Garcia (mfellows1@gmail.com)

Nível de confiança:
Limitado (com visitas às instalações realizadas de forma remota)

Histórico de Versões
03/05/2021 – Emissão do documento

SUMÁRIO

24
cidades atendidas na região metropolitana de São Paulo

4.526
Km²
área de concessão

44.028
Km
redes de distribuição

7,5
milhões de clientes

18,3
milhões de pessoas atendidas

A–
Score da Enel Distribuição São Paulo no CDP Climate Change, reconhecendo que a empresa está no estágio de "Liderança" na atuação em Mudanças Climáticas

SOBRE A ENEL DISTRIBUIÇÃO SÃO PAULO

A Enel Distribuição São Paulo é uma companhia de capital aberto, responsável pela distribuição da energia elétrica que abastece 24 cidades da região metropolitana de São Paulo, incluindo a capital paulista, um dos principais centros econômico-financeiros do país.

A área de concessão, de 4.526 km², concentra o maior PIB nacional e a mais alta densidade demográfica do país, com 1.647 unidades consumidoras por km², o que corresponde a 8,5% do total de energia elétrica consumida no Brasil.

Para cumprir com excelência o desafio de atender aproximadamente 18,3 milhões de pessoas todos os dias, a Enel Distribuição São Paulo está permanentemente comprometida em prestar melhores serviços e de forma mais rápida. A Companhia está sempre preocupada em ouvir e entender seus clientes, mantendo um diálogo aberto com todos os seus públicos. A Enel Distribuição São Paulo é consciente da importância do seu papel no desenvolvimento do estado e do país.

Para atender à demanda de aproximadamente 7,5 milhões de unidades consumidoras, a Enel Distribuição São Paulo, que conta com 5.848 colaboradores próprios, dispõe de uma infraestrutura formada por 162 subestações e uma malha de distribuição e subtransmissão, cabos aéreos e subterrâneos de mais de 45 mil quilômetros, dos quais 1.834 km são linhas de subtransmissão e 44.028 km são redes de distribuição aérea e subterrânea. No ano de 2020, foram distribuídos mais de 42,7 TWh de energia.

Desde junho de 2018, a Enel Distribuição São Paulo faz parte do grupo Enel Brasil, uma companhia multinacional e um dos principais *players* do mercado global de energia – e a maior empresa privada do setor elétrico brasileiro. A Enel Brasil desempenha papel de liderança no desenvolvimento nacional de fontes renováveis (solar e eólica) e na distribuição de energia, além de deter posição em todos os setores da cadeia, desenvolvendo atividades também em geração hidráulica e térmica, transmissão, comercialização e soluções em energia.

Somos a energia que move o Brasil!

Estrutura acionária

A Enel Distribuição São Paulo é controlada pela holding Enel Brasil S.A., que detém 100% das ações da companhia e, portanto, seu controle operacional. Em 31 de dezembro de 2020, todas as 197.466.862 ações da empresa eram ações ordinárias.

Enel Brasil S.A.

T = 100%

Eletropaulo Metropolitana Eletricidade de São Paulo S.A.

Compromisso com a gestão das emissões de gases de efeito estufa

A Enel Distribuição São Paulo está comprometida com a transparência na gestão e divulgação de informações relacionadas às suas emissões de gases de efeito estufa. Este compromisso pode ser verificado na Declaração de Compromisso para Mudanças Climáticas da companhia (que pode ser encontrado no Anexo II), e evidenciado pela tradição da empresa na publicação de seu Inventário de Emissões de Gases de Efeito Estufa. A empresa realiza e divulga publicamente seu inventário completo desde 2012, e desde 2016 o submete à verificação externa para garantir a confiabilidade e exatidão dos dados.

LIMITES DO INVENTÁRIO

Limites organizacionais

As emissões relatadas neste Inventário são referentes à empresa Eletropaulo Metropolitana Eletricidade de São Paulo S.A., sob o nome fantasia de "Enel Distribuição São Paulo".

Não há nenhuma entidade subsidiária ou controlada.

Abordagem de consolidação

As emissões relatadas neste Inventário foram consolidadas sob a abordagem de Controle Operacional.

Limites operacionais

As emissões relatadas neste Inventário compreendem os Escopos 1, 2 e 3, nas categorias indicadas a seguir.

Emissões de Gases de Efeito Estufa

Escopo 1
Emissões diretas

- Combustão móvel
- Combustão estacionária
- Fugitivas
- Mudança no uso do solo

Escopo 2
Emissões indiretas de compra de energia

- Aquisição de energia elétrica
- Perdas por transmissão e distribuição

Escopo 3
Outras emissões indiretas

- Bens e serviços comprados
- Atividades relacionadas com combustível e energia não inclusas nos Escopos 1 e 2
- Resíduos gerados nas operações
- Viagens e negócios
- Deslocamento de funcionários (casa-trabalho)

METODOLOGIAS UTILIZADAS

Programa Brasileiro GHG Protocol

As emissões relatadas neste Inventário foram calculadas utilizando a metodologia do Programa Brasileiro GHG Protocol, e de acordo com a norma ISO 14064-1:2007.

Foi utilizada a ferramenta de cálculo do Programa Brasileiro GHG Protocol, em sua versão v2021.0.1.

Cálculo de emissões e remoções de carbono devido a mudanças de uso e ocupação do solo

Para o cálculo das emissões e remoções de carbono relacionadas a mudanças de uso e ocupação do solo foi utilizada uma metodologia própria da companhia, com base em fatores de emissão e sequestro de carbono disponíveis na literatura.
Os fatores utilizados encontram-se na tabela a seguir.

DADO NECESSÁRIO	REFERÊNCIA	FATOR UTILIZADO
Estoque de Carbono Total na Biomassa	**Terceiro Inventário Brasileiro de Emissões e Remoções Antrópicas de Gases de Efeito Estufa (MCTI, 2015).** Tabela 18: "Estoques de carbono por unidade de área (tC/ha), total e nos diferentes reservatórios (acima e abaixo do solo), madeira morta e serrapilheira das fitofisionomias do bioma Mata Atlântica, bioma de origem da estimativa de biomassa acima do solo; fontes utilizadas para gerar o estoque de carbono total; critérios utilizados na escolha das fontes e outras fontes consultadas''; Coluna "Estoque total".	Dm = 177,75 tC/ha SN = 39,92 tC/ha Fs = 123,05 tC/ha Sa = 39,92 tC/ha
Fator de Alteração de Carbono no Solo	**Relatório de Referência Setor Uso da Terra, Mudança do Uso da Terra e Florestas (MCTI, 2015).** Tabela 6: "Fatores de alteração do carbono do solo com a mudança do uso da terra", Coluna "fc".	Ref = 0,673 Ac = 0,612 Fsec = 1 Gsec = 1
Estoque de Carbono no Solo	**Relatório de Referência Setor Uso da Terra, Mudança do Uso da Terra e Florestas (MCTI, 2015).** Tabela 1: "Estoque de carbono nos solos por associação solo-vegetação".	V4-S3 = 40 tC/ha V9-S2 = 43,1 tC/ha V9-S3 = 36 tC/ha

Outras metodologias ou ferramentas

Não foram utilizadas outras metodologias e/ou ferramentas intersetoriais ou para setores específicos.

EMISSÕES TOTAIS

A seguir é apresentado um resumo das emissões do ano inventariado para os três Escopos, por tipo de gás e em toneladas de carbono equivalente.

	Emissões em toneladas métricas, por tipo de GEE			Emissões em toneladas métricas de CO_2 equivalente (tCO_2e)		
GEE	ESCOPO 1	ESCOPO 2*	ESCOPO 3	ESCOPO 1	ESCOPO 2*	ESCOPO 3
CO_2	7.127,513	299.014,924	1.861.511,229	7.127,513	299.014,924	1.861.511,229
CH_4	1,260	0,001	25,576	31,500	0,025	639,400
N_2O	0,322	-	0,354	95,956	-	105,492
HFCs	0,272		0,012	522,358		25,050
PFCs	-		-	-		-
SF_6	0,040		-	912,000		-
NF_3	-		-	-		-
Total				**8.689,327**	**299.014,949**	**1.862.281,171**
CO_2 biogênico				**3.944,217**	**1,095**	**2.860,954**

* Abordagem por localização

O ano de 2020 foi marcado pela pandemia mundial da Covid-19, que impactou profundamente as dinâmicas econômicas e sociais, com a aplicação de medidas de restrição de circulação e a consequente redução no padrão de consumo de energia. Isso modificou tanto as dinâmicas internas da empresa, nas emissões de Escopo 1 e 2, quanto as dinâmicas de venda e perdas de energia, nas emissões de Escopo 2 e 3. Também foi um ano favorável à geração de energia renovável no país, o que resultou num fator de emissão do grid[1] menor, impactando as emissões de Escopo 2 e 3.

Nos capítulos 5, 6 e 7 são exploradas as variações em relação ao ano-base (2019), com as devidas explicações e interpretações dos dados apresentados. No capítulo 12 é apresentada uma análise do histórico desde o início das medições de emissões de GEE da empresa (2012).

1 O fator de emissão do grid é reflexo das emissões referentes à geração de energia do Brasil, indicando quantas toneladas de carbono o sistema elétrico brasileiro emite para produzir cada MWh de energia no período em questão.

ESCOPO 1

Em 2020, houve redução de 18,5% nas emissões de combustão móvel, que podem ser parcialmente explicadas pelas iniciativas desenvolvidas pela empresa para eficientização da frota.

A seguir são apresentadas as emissões e remoções de Escopo 1, desagregadas por categoria.

As emissões relacionadas à combustão móvel provêm da frota da empresa, que compreende veículos leves, utilitários e pesados, movidos a etanol, gasolina, diesel e GNV.

Os veículos são utilizados tanto para as operações de construção e manutenção da rede de distribuição quanto para necessidades auxiliares, como deslocamento de funcionários para demandas diversas.

As emissões relacionadas à combustão estacionária provêm dos equipamentos geradores e motosserras. Os geradores são utilizados pela empresa em duas situações: nas bases operacionais, como *backup* para situações de falta de energia, e como fonte de energia para manter o fornecimento aos clientes durante as operações de manutenção (programada ou emergencial) na rede de distribuição, evitando desligamentos. As motosserras são utilizadas para podas e supressões de árvores necessárias para construção e manutenção de linhas de subtransmissão e subestações. As podas realizadas para manutenção das redes de distribuição, necessárias para manter o convívio harmônico da rede de distribuição com a vegetação local, são realizadas utilizando motosserras hidráulicas, sem consumo de combustível específico para os equipamentos.

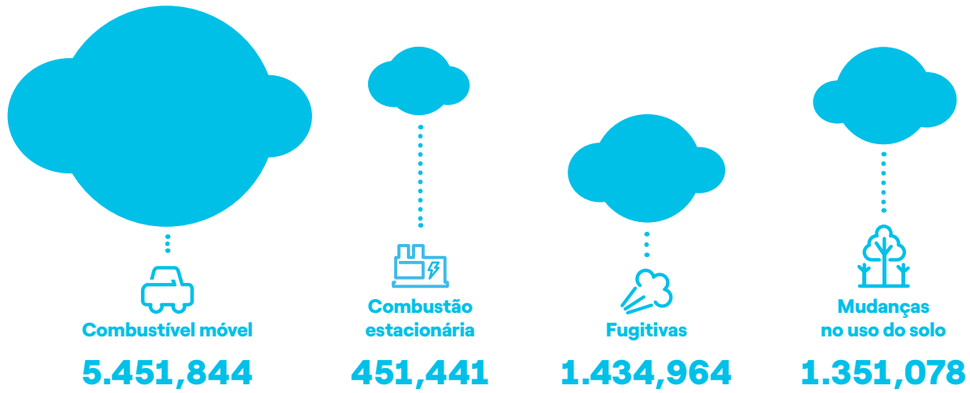
As emissões fugitivas provêm de pequenos vazamentos de gás nos equipamentos de ar-condicionado, de reposição dos cilindros extintores de incêndio a gás carbônico, e de vazamentos de gás Hexafluoreto de Enxofre (SF6)[1] em equipamentos da subtransmissão e dos sistemas de distribuição aérea e subterrânea.

As emissões relacionadas à mudança de uso do solo provêm das supressões de vegetação, eventualmente necessárias para manutenção da infraestrutura existente ou construção de novas subestações e linhas de subtransmissão ou distribuição. As supressões somente são realizadas com as devidas autorizações dos órgãos competentes, e podem gerar a necessidade de compensação ambiental através do plantio de árvores em outras localidades, devidamente aprovadas pelos órgãos ambientais. Como as necessidades de supressão variam muito de um ano para o outro, estas emissões podem chegar a ser responsáveis por mais de 60% das emissões de Escopo 1 – como aconteceu nos anos de 2016 e 2019, quando ocorreram mais supressões de vegetação – ou cerca de 15% das emissões de Escopo 1 – como é o caso do ano de 2020, quando uma área menor foi suprimida. O carbono sequestrado pelas árvores plantadas nos projetos de compensação ambiental da empresa e em outros plantios voluntários realizados é contabilizado como remoção de CO_2 biogênico nesta categoria do Escopo 1.

1 O Hexafluoreto de Enxofre (SF6) é um gás bastante utilizado em equipamentos elétricos como isolante e extintor de arcos elétricos.

CATEGORIA	EMISSÕES (tCO_2e)	EMISSÕES DE CO_2 BIOGÊNICO (t)	REMOÇÕES DE CO_2 BIOGÊNICO (t)
Combustão móvel	5.451,844	3.890,030	-
Combustão estacionária	451,441	54,187	-
Fugitivas	1.434,964	-	-
Mudanças no uso do solo	1.351,078	-	1.149,429
Total	**8.689,327**	**3.944,217**	**1.149,429**

Emissões (tCO_2e)



No ano de 2020, houve redução de 63% nas emissões de Escopo 1 em relação ao ano de 2019. O principal fator que ocasionou esta redução foi a menor supressão de vegetação, implicando em menores emissões relacionadas à mudança no uso do solo. Adicionalmente, houve redução de 18,5% nas emissões de combustão móvel, que pode ser explicada pelas iniciativas desenvolvidas pela empresa para eficientização da frota, visando reduzir o consumo de combustíveis, e pela redução no atendimento de ocorrências por equipes próprias, causando menos necessidade de deslocamento. Ainda, ocorreu uma redução de 34,7% nas emissões fugitivas, pois em 2020 foram realizados poucos descomissionamentos[2] de equipamentos isolados a SF6 do sistema subterrâneo e dos equipamentos de automação da rede, em comparação a 2019. Entretanto, as emissões de combustão estacionária aumentaram em 288% em relação ao período anterior, pois houve a necessidade de maior utilização dos geradores de energia para manter o fornecimento aos clientes, visando o atendimento aos indicadores regulatórios de qualidade do fornecimento de energia e a satisfação dos clientes.

2 O descomissionamento consiste na retirada de operação do equipamento, momento no qual o gás SF6 é drenado e são identificadas e contabilizadas as fugas de gás para o caso de equipamentos do subterrâneo e da automação.

ESCOPO 2

Em comparação ao ano de 2019, o ano de 2020 apresentou uma redução de 14,6% nas emissões de Escopo 2.

A seguir são apresentadas as emissões de Escopo 2, desagregadas por categoria. A empresa consolida seu Escopo 2 pela abordagem de localização.

As emissões relacionadas à aquisição de energia elétrica provêm da energia elétrica utilizada pela companhia para abastecimento de seu escritório sede, de suas bases operacionais, e para a operação de toda a infraestrutura necessária para o funcionamento do sistema de distribuição de energia (estações transformadoras, estruturas de proteção, bancos de capacitores, entre outros).

As emissões relacionadas a perdas por transmissão e distribuição provêm da energia perdida no sistema de distribuição. Inclui as perdas técnicas, ou seja, as perdas inerentes aos processos de transporte de energia pelos cabos e de transformação da energia de alta para baixa tensão, onde parte da energia é perdida em forma de calor. Também inclui as perdas comerciais, que são os furtos de energia elétrica da rede. Este item é responsável por aproximadamente 99% do Escopo 2.

CATEGORIA	EMISSÕES (tCO_2e)	EMISSÕES DE CO_2 BIOGÊNICO (t)	REMOÇÕES DE CO_2 BIOGÊNICO (t)
Aquisição de energia elétrica	2.439,272	1,095	-
Perdas por transmissão e distribuição	296.575,677	-	-
Total	**299.014,949**	**1,095**	**-**

Em comparação ao ano de 2019, o ano de 2020 apresentou uma redução de 14,6% nas emissões de Escopo 2. Três fatores ocasionaram esta redução. O primeiro foi a redução do consumo de energia nas instalações da empresa, visto que os colaboradores administrativos passaram a trabalhar de suas residências a partir do mês de março, devido à pandemia da Covid-19. O segundo foi a diminuição do consumo de energia pelos clientes da companhia em cerca de 6,6%, o que implica menos consumo de energia para operação da infraestrutura de distribuição de energia. A terceira e mais importante causa, e que foi determinante para esta redução, foi o fator de emissão do *grid* (tema que será explorado em mais detalhes no capítulo 12.2), que teve redução de 17,7%. Devido a esta diminuição, mesmo com o aumento das perdas totais ocorridas no ano de 2020, o Escopo 2 teve uma redução. O acréscimo nas perdas de energia em 2020 foi resultado do incremento nas perdas comerciais, decorrente do aumento da indisciplina de mercado ocasionada pela pandemia de Covid-19.

ESCOPO 3

Em 2020, houve decréscimo de 22,8% nas emissões de Escopo 3.

A seguir são apresentadas as emissões de Escopo 3, desagregadas por categoria. As categorias selecionadas para inclusão no Escopo 3 são aquelas:

- Representativas, ou seja, que representam a maior parte das emissões do escopo ("atividades relacionadas com combustível e energia não inclusas nos Escopos 1 e 2").
- Que seriam parte do Escopo 1 da companhia caso não houvesse terceirização das atividades *core business* ("bens e serviços comprados").
- Que são fáceis de medir com os dados disponíveis na empresa ("resíduos gerados nas operações", "viagens a negócios" e "deslocamento de funcionários casa-trabalho").

As emissões relacionadas a bens e serviços comprados são referentes às empresas parceiras que realizam parte de nossas atividades *core business*, construção e manutenção da infraestrutura de distribuição de energia. São incluídos o Escopo 1 (para todas as empresas acompanhadas) e o Escopo 2 (somente para empresas cujas bases operacionais estão fora da área de concessão da companhia, pois se estiver, essa emissão já estará contabilizada na categoria "atividades relacionadas com combustível e energia não inclusas nos Escopos 1 e 2").

As emissões de atividades relacionadas com combustível e energia não inclusas nos Escopos 1 e 2 são referentes às emissões advindas da geração da energia que a empresa vende a seus clientes cativos[1].

As emissões relacionadas a resíduos gerados nas operações são referentes aos resíduos de lixo comum e madeira que a empresa envia para destinação em aterros sanitários, e que gerarão gases de efeito estufa durante sua decomposição. Não são incluídos os resíduos que não se decompõem (por exemplo, resíduos de construção civil) nem os resíduos que são destinados para reaproveitamento.

As emissões relacionadas a viagens a negócios incluem as viagens aéreas realizadas pelos colaboradores da empresa para diversas atividades relacionadas ao negócio.

As emissões relacionadas a deslocamento de funcionários (casa-trabalho) incluem as emissões dos ônibus fretados contratados para realizarem o transporte dos colaboradores entre suas residências e a sede da empresa.

1 Os clientes cativos são aqueles que compram a energia que consomem da Enel Distribuição São Paulo, além do serviço de distribuição de energia. Este é o caso de grande parte dos clientes residenciais e comerciais.
Os clientes livres, em contrapartida, compram da Enel Distribuição São Paulo somente o serviço de distribuição de energia, e compram a energia que consomem diretamente dos geradores, através de contratos específicos de compra e venda de energia (PPAs, Power Purchase Agreements). Estes não estão inclusos na contabilização de emissões de Escopo 3.

CATEGORIA	EMISSÕES (tCO_2e)	EMISSÕES DE CO_2 BIOGÊNICO (t)	REMOÇÕES DE CO_2 BIOGÊNICO (t)
Bens e serviços comprados	5.007,214	2.846,234	-
Atividades relacionadas com combustível e energia não inclusas nos Escopos 1 e 2	1.856.459,754	-	-
Resíduos gerados nas operações	607,975	-	-
Viagens a negócios	81,528	-	-
Deslocamento de funcionários (casa-trabalho)	124,700	14,720	-
Total	**1.862.281,171**	**2.860,954**	**-**

Em 2020, houve decréscimo de 22,8% nas emissões de Escopo 3. Este fato pode ser explicado por dois motivos principais, que impactaram no item de atividades relacionadas com combustível e energia não inclusas nos Escopos 1 e 2. O primeiro foi a diminuição do consumo de energia pelos clientes cativos da companhia, que recuou em 8,3%, principalmente devido à retração econômica e alteração nos padrões sociais decorrentes da pandemia de Covid-19. O segundo motivo foi o fator de emissão do grid (tema que será explorado em mais detalhes no capítulo 12.2), que teve redução de 17,7%. sobre o ano de 2020.

As emissões de Escopo 3 referentes a viagens a negócios e deslocamento de funcionários (casa-trabalho) foram drasticamente reduzidas no ano de 2020, uma vez que a partir do mês de março os colaboradores que trabalhavam na sede da empresa e utilizavam os ônibus fretados para deslocamento passaram a trabalhar em regime de *home office*, de suas residências, zerando as emissões desta fonte desde então. O mesmo impacto ocorreu nas viagens a negócios, que foram canceladas também a partir do mês de março.

EMISSÕES NÃO QUIOTO

As emissões de gases não cobertos pelo Protocolo de Quioto são emissões fugitivas que provêm de pequenos vazamentos de gás nos equipamentos de ar-condicionado cujo fluido refrigerante é o HCFC-22 (popularmente conhecido como R22). A seguir são apresentadas as emissões referentes a este gás.

GÁS	EMISSÕES (tCO_2e)
HCFC-22 (R22)	**295,826**

OUTRAS DESAGREGAÇÕES

Emissões fora do Brasil

A empresa não possui emissões fora do Brasil.

Emissões por unidade

A empresa não possui unidades com emissão de Escopo 1 superior a 10.000 tCO_2e, e, desta forma, não são reportadas emissões desagregadas por unidade.

COMPENSAÇÃO DE EMISSÕES

Compensação de 3.000 toneladas de carbono.

Seguindo o compromisso da empresa com uma adequada gestão das emissões de gases de efeito estufa, desde 2019 ela realiza a compensação de parte das suas emissões de Escopo 1 de forma voluntária.

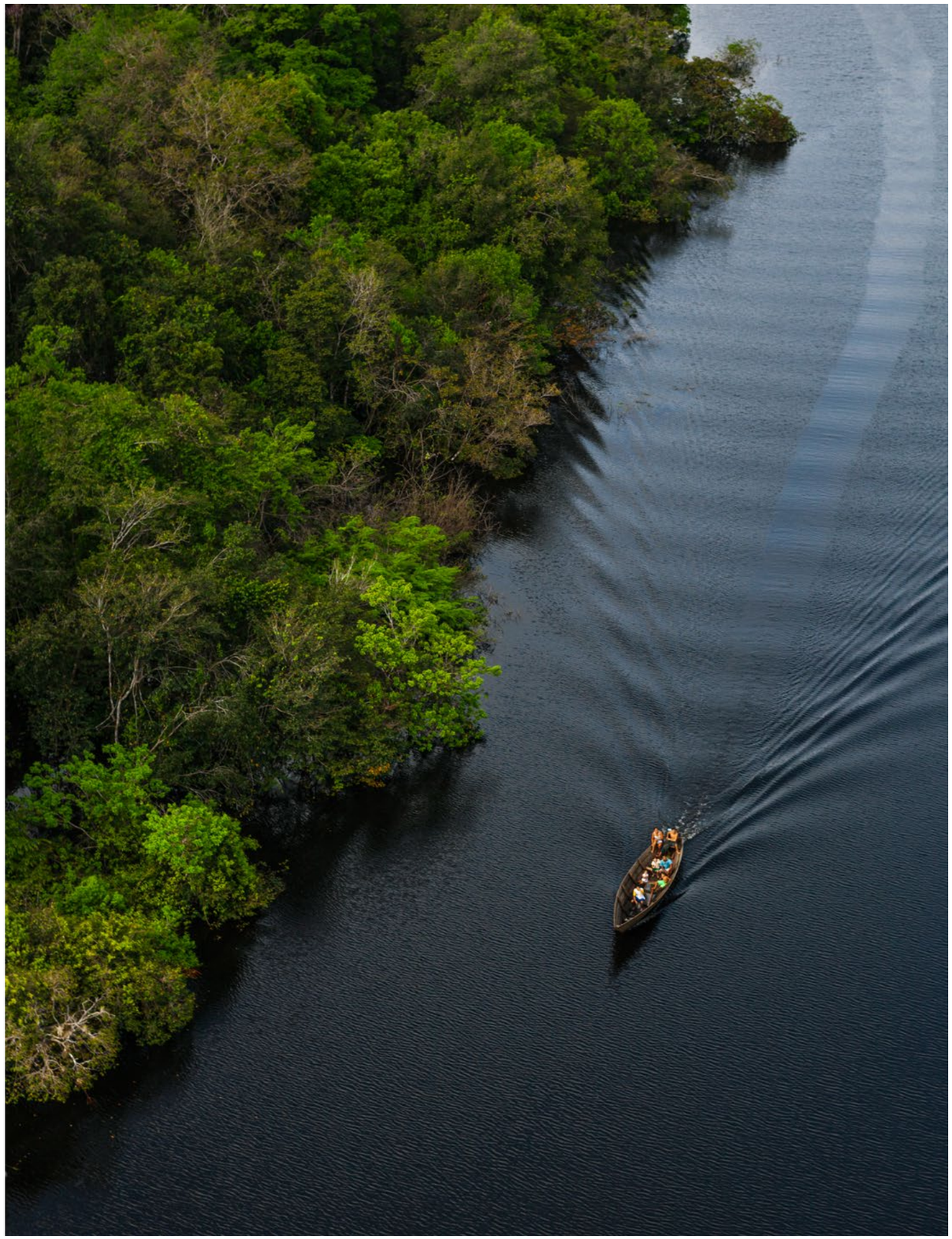
No ano de 2020 foram compensadas 3.000 toneladas de carbono, através da compra de créditos de carbono de dois projetos:

> 750 créditos de carbono do projeto REDD+ Jari-Pará, de desmatamento evitado na região Amazônica, junto à parceira Biofílica. O certificado de cancelamento voluntário encontra-se no Anexo III.

> 2.250 créditos de carbono do projeto Bandeirantes Landfill Gas to Energy, de captura e queima de metano em aterro sanitário para geração de energia, junto à parceira Way Carbon. O certificado de cancelamento voluntário encontra-se no Anexo IV.

750
créditos de carbono
do projeto REDD+ Jari-Pará

2.250
créditos de carbono
do projeto Bandeirantes Landfill Gas to Energy



INFORMAÇÕES ADICIONAIS

Estratégias e metas para a redução de emissões de GEE

A Enel Distribuição São Paulo está comprometida com a redução das suas emissões de gases de efeito estufa, conforme expressado na **Declaração de Compromisso para Mudanças Climáticas** (Anexo II), que inclui a redução de suas emissões como compromisso da empresa.

Anualmente, são estabelecidas metas de redução de emissões de GEE, tendo como base o desempenho do ano anterior, para as principais fontes de Escopo 1 e 2: consumo de combustíveis da frota, fugas de gás SF6 e perdas totais na distribuição. O acompanhamento destas metas é realizado também pelos objetivos, metas e indicadores do Sistema de Gestão Integrado da companhia.

A empresa não possui metas de redução de emissões a médio e a longo prazo, mas está desenvolvendo internamente uma proposta que deve ser formalizada no próximo ano.

Indicadores de acompanhamento de emissões de GEE

A Enel Distribuição São Paulo acompanha mensalmente suas emissões de Escopo 1, 2 e 3, de todas as fontes identificadas.

Também utiliza, para fins de reportes externos, o indicador de Emissões (Escopo 1 + Escopo 2) por energia distribuída.

Incertezas, exclusões, limitações ou observações

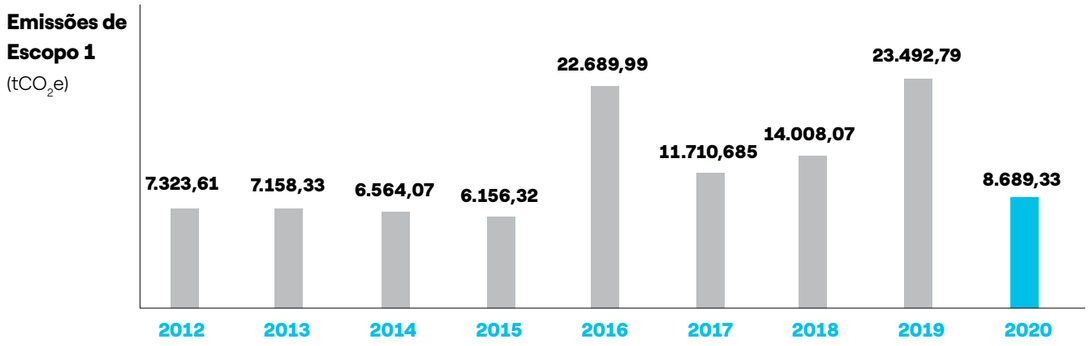
Nenhuma fonte de emissão foi excluída do inventário de emissões de GEE. Não foram realizadas alterações na forma de obtenção e consolidação dos dados primários em relação ao inventário do ano anterior.

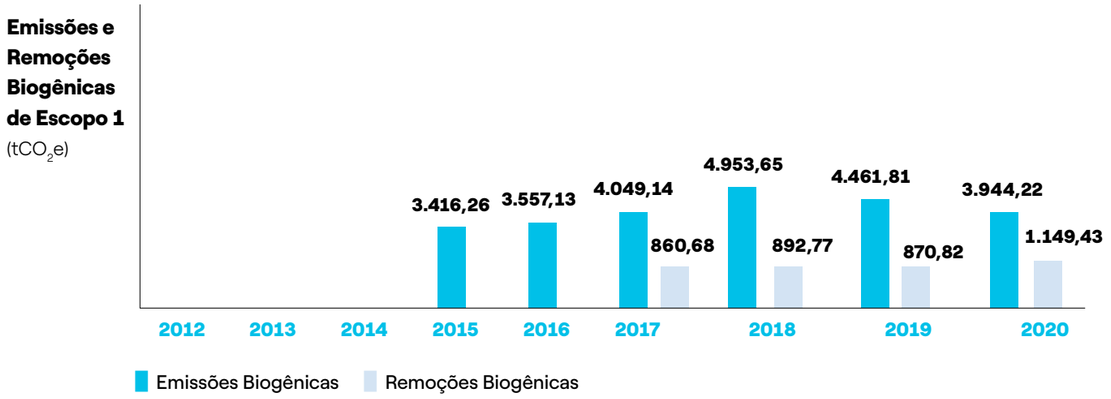
Devido às limitações impostas pela pandemia de Covid-19, a verificação e as visitas às instalações operacionais da empresa foram realizadas de forma remota.

HISTÓRICO DE EMISSÕES

A seguir são apresentadas as emissões e remoções de gases de efeito estufa da Enel Distribuição São Paulo desde o início do monitoramento, bem como o histórico de compensação de emissões de gases de efeito estufa. Em seguida, alguns comentários gerais e explicações sobre as variações anuais nas emissões e remoções.

Emissões e remoções de Escopo 1





Existem duas principais fontes de emissão de Escopo 1 na Enel Distribuição São Paulo: a frota de veículos e as supressões de vegetação.

As supressões de vegetação, cujas emissões são contabilizadas no item de mudança de uso do solo, variam muito de um ano para o outro, conforme as necessidades operacionais da empresa. Estas emissões podem chegar a ser responsáveis por mais de 60% das emissões de Escopo 1 – como aconteceu nos anos de 2016 e 2019, quando ocorreram mais supressões de vegetação – ou cerca de 15% das emissões de Escopo 1 – como é o caso do ano de 2020, quando uma área menor foi suprimida. As emissões referentes à mudança de uso do solo passaram a ser contabilizadas em 2016, ano em que se nota um salto no padrão de emissões da companhia. Antes desta data este reporte não era obrigatório pela metodologia do GHG Protocol.

As emissões referentes à frota de veículos, contabilizadas no item de combustão móvel, vem sendo reduzidas ao longo do tempo, principalmente devido às iniciativas da empresa para redução do consumo de combustíveis pela frota, que consiste em troca de veículos operacionais e leves por modelos mais novos e mais eficientes, campanhas de treinamento e conscientização, e troca de combustível fóssil por renovável na frota leve – onde esta troca é possível.

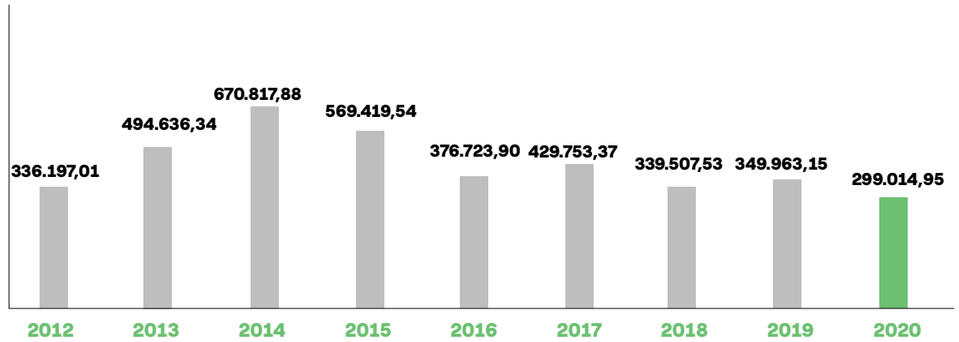
As emissões fugitivas sofreram um aumento nos últimos anos por dois motivos principais. O primeiro deles é o Plano de Eliminação de R22 da companhia, que prevê a troca de todos os sistemas de ar-condicionado que utilizam gás R22, gás destruidor da camada de ozônio e gás de efeito estufa, porém não contabilizado no inventário de emissões de GEE por ser não Quioto, por sistemas que utilizam outros gases não destruidores da camada de ozônio. Sendo assim, as fugas de R22, que não seriam contabilizadas, passam a ser fugas de gases que são contabilizados, aumentando as emissões fugitivas reportadas. O segundo motivo é a utilização de SF6 e a contabilização das fugas deste gás nos equipamentos do sistema de distribuição de energia subterrâneo e nos equipamentos de automação da rede aérea, que passou a ocorrer a partir de 2019, resultando num aumento de fugas de SF6 e, consequentemente, um aumento de emissões fugitivas.

As emissões biogênicas de carbono são resultantes da parcela de etanol na composição dos combustíveis utilizados pela empresa. Seu quantitativo acompanha as emissões de combustão estacionária, referentes à frota.

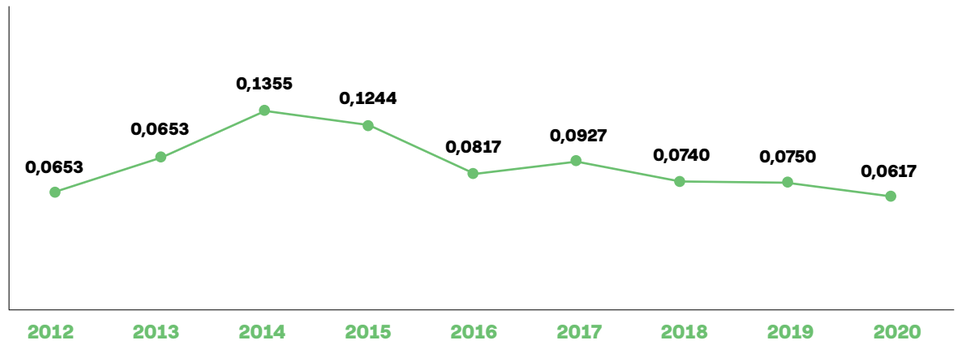
Já as remoções de carbono, referentes às árvores plantadas nos projetos de compensação ambiental da empresa e em outros plantios voluntários, começaram a ser contabilizadas em 2017, através de metodologia própria da empresa. Conforme aumenta a área mantida pela empresa, também aumentam as remoções de carbono. É importante ressaltar que a empresa apenas contabiliza em seu inventário as remoções referentes ao período em que a mesma possui o controle operacional das áreas dos plantios, o que geralmente ocorre até o momento em que o órgão ambiental emite o termo de cumprimento da compensação ambiental.

Emissões de Escopo 2

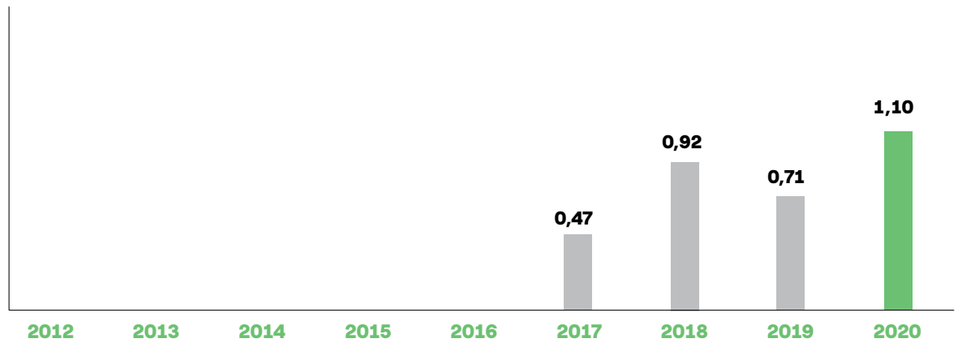
Emissões de Escopo 2
(tCO_2e)



Fator de Emissão do SIN
(tCO_2/MWh)



Emissões Biogênicas de Escopo 2
(tCO_2e)

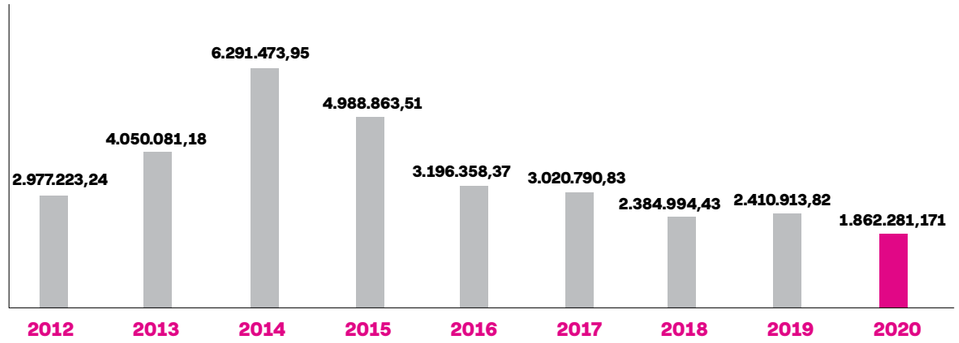


A principal fonte de emissão de Escopo 2 da Enel Distribuição São Paulo são as perdas de energia, responsáveis por aproximadamente 99% do escopo. A companhia desenvolve diversas atividades visando a redução nas perdas de energia, que variam entre 9,5% e 10,5% do total de energia que entra no sistema. O percentual de perdas é um indicador regulatório que deve ser cumprido, e sua redução é objetivo estratégico da companhia. O principal fator que influencia no percentual de energia perdida são as perdas comerciais (ou furtos de energia). Porém, o valor bruto das perdas, em MWh, é também influenciado pela quantidade de energia que entra no sistema de distribuição, que é diretamente proporcional ao consumo de energia pelos clientes. Sendo assim, um aumento de consumo de energia pelos clientes impacta em aumento de perdas (em MWh) e, consequentemente, um aumento nas emissões de Escopo 2. Entretanto, uma vez que as emissões de Escopo 2 (em MWh) são convertidas em emissões de carbono utilizando o fator de emissão do grid do SIN – Sistema Integrado Nacional, ou seja, quantas toneladas de carbono o sistema elétrico brasileiro emite para produzir cada MWh de energia, o fator crucial que explica a maior parte da variação das emissões de Escopo 2 é a variação do fator de emissão do grid do SIN. A variação das emissões de Escopo 2 acompanha a variação do fator de emissão do grid do SIN, como pode ser observado nos gráficos apresentados.

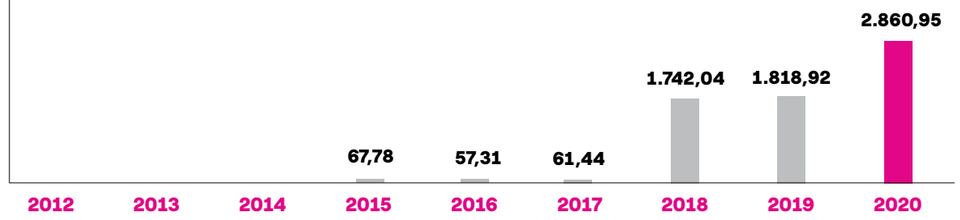
A partir de 2017 passaram a ser contabilizadas as emissões dos geradores de energia do prédio sede da empresa (de propriedade do condomínio onde a empresa está alocada), e por isso se nota o aparecimento de emissões biogênicas a partir desse ano (referente à parcela de etanol na composição dos combustíveis utilizados).

Emissões de Escopo 3

Emissões de Escopo 3
(tCO_2e)



Emissões Biogênicas de Escopo 3
(tCO_2e)



A principal fonte de emissão de Escopo 3 da Enel Distribuição São Paulo é a energia vendida para os clientes cativos, responsável por mais de 99,5% do escopo. Sendo assim, o Escopo 3 da companhia reflete o comportamento do mercado consumidor cativo, explicitado na quantidade de energia comprada. Entretanto, o fator crucial que explica a maior parte da variação das emissões de Escopo 3 é o fator de emissão do grid do SIN – Sistema Integrado Nacional, ou seja, quantas toneladas de carbono o sistema elétrico brasileiro emite para produzir cada MWh de energia. A variação das emissões de Escopo 3 acompanha a variação do fator de emissão do grid do SIN.

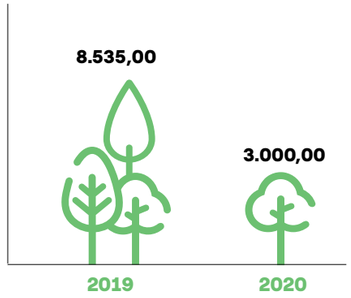
A partir de 2018, passaram a ser contabilizadas as emissões das contratadas *core business*, e por isso se nota um aumento nas emissões biogênicas a partir desse ano (referente à parcela de etanol na composição dos combustíveis utilizados).

Compensação de emissões

A Enel Distribuição São Paulo teve sua primeira experiência com compensação voluntária de emissões de GEE no ano de 2019. Na ocasião, foram compensadas 8.535 toneladas de CO_2 equivalente. Este projeto fez parte da atuação do Grupo de Trabalho de Mudanças Climáticas da Enel Distribuição São Paulo, que estudou as melhores práticas em compensação de emissões de gases de efeito estufa e trabalhou numa proposta que fosse adequada ao contexto da organização, visando maximizar os impactos positivos de sua atuação.

Em 2020, apesar das restrições orçamentárias impostas pela pandemia da Covid-19 e do aumento do preço do dólar, que ocasionou também um aumento nos preços de negociação de créditos de carbono, a empresa optou por manter essa iniciativa, mesmo que em menor escala. Foi realizada a compensação de 3.000 toneladas de CO_2 equivalente.

Compensação de Emissões
(tCO_2e)



CONCLUSÃO

O ano de 2020 trouxe diversos desafios para a empresa e suas pessoas, incluindo a necessidade de revisão nas formas e dinâmicas de trabalho.

Apesar das dificuldades, a Enel Distribuição São Paulo mantém seu compromisso em reduzir suas emissões de gases de efeito estufa, em influenciar sua cadeia de valor para que faça o mesmo, e em gerir de forma adequada os riscos e oportunidades trazidos pelas Mudanças Climáticas.

Em 2020, a empresa foi reconhecida com a nota "A-" no CDP Climate Change, que significa que a empresa está no patamar de liderança na gestão das Mudanças Climáticas, e coroa o trabalho que vem sendo desenvolvido ao longo dos anos nesta temática.

Continuaremos em 2021 nesta jornada para construir um futuro zero carbono.

Juntos chegaremos lá!

ANEXOS

Anexo I – Declaração de verificação do inventário de emissões de gases de efeito estufa

Anexo II – Declaração de compromisso para Mudanças Climáticas

Anexo III – Certificado de cancelamento voluntário de créditos de carbono – Projeto REDD+ Jari-Pará

Anexo IV – Certificado de cancelamento voluntário de créditos de carbono – Projeto Bandeirantes Landfill Gas to Energy e Certificado empresa Amiga do Clima

Anexo V – Relatórios de validação e verificação – Projeto REDD+ Jari-Pará

Anexo VI – Relatórios de validação e verificação – Projeto Bandeirantes Landfill Gas to Energy

Anexo I – Declaração de verificação do inventário de emissões de gases de efeito estufa

DECLARAÇÃO DE CONFORMIDADE
Conformity Declaration

DECLARAÇÃO DE VERIFICAÇÃO

Nº 367.007/21

Esta **Declaração de Verificação** documenta que a ABNT realizou atividades de verificação de acordo com a norma ABNT NBR ISO 14064-3:2007 e *as Especificações de Verificação do Programa Brasileiro GHG Protocol*.

Eletropaulo Metropolitana Eletricidade de São Paulo S.A. (Enel Distribuição São Paulo)
Responsável pelo Inventário: **Natália Ribeiro Cruz**
E-mail: natalia.ribeiro@enel.com

Associação Brasileira de Normas Técnicas – ABNT
Verificador Líder: **Mariana Fellows Garcia**
E-mail: mfellows1@gmail.com

As emissões de gases de efeito estufa (GEE) informadas pela **Eletropaulo Metropolitana Eletricidade de São Paulo S.A. (Enel Distribuição São Paulo)** em seu inventário de emissões, de 1º de janeiro até 31 de dezembro de **2020,** são verificáveis e cumprem os requisitos da norma ABNT NBR ISO 14064-1:2007 e do Programa Brasileiro GHG Protocol, detalhados nas *Especificações do Programa Brasileiro GHG Protocol de Contabilização, Quantificação e Publicação de Inventários Corporativos de Emissões de Gases de Efeito Estufa (EPB)*.

Nível de Confiança

A ABNT atribuiu o seguinte nível de confiança ao processo de verificação:

☒ Verificação com nível de **confiança limitado**.
"**Não há indícios** de que o inventário de gases de efeito estufa da **Eletropaulo Metropolitana Eletricidade de São Paulo S.A. (Enel Distribuição São Paulo)** para o ano de **2020** não esteja materialmente correto, não seja uma representação justa dos dados e informações de GEE e não tenha sido preparado de acordo com as EPB."

Os limites do processo de verificação foram:
O número mínimo de visitas às instalações não foi atingido, pois a verificação foi feita de forma remota, como permitido pela equipe do PBGHGP para o Ciclo 2021 por causa da pandemia do covid-19.

Inventário GEE - OVV
OVV 0005

Declaração de Verificação ABNT NBR ISO 14064-1

ABNT Associação Brasileira de Normas Técnicas
Av. Treze de Maio, 13 – 28º Andar – Centro – **Rio de Janeiro – RJ** – CEP 20031-901
Rua Conselheiro Nebias, 1.131 – Campos Elíseos – **São Paulo – SP** – CEP 01203-002

DECLARAÇÃO DE CONFORMIDADE
Conformity Declaration

Descrição do Escopo da Verificação

O inventário do ano de **2020** da **Eletropaulo Metropolitana Eletricidade de São Paulo S.A. (Enel Distribuição São Paulo)** foi verificado dentro do seguinte escopo:

Limites Organizacionais	**Limites operacionais**
☒ Controle Operacional ☐ Participação Societária	☒ Escopo 1 ☒ Escopo 2 – Abordagem em localização ☐ Escopo 2 – Abordagem Baseada em escolha de compra ☒ Escopo 3

☐ Foram excluídas da Verificação: N/A

Instalações visitadas

Lista das instalações visitadas durante o processo de verificação:

A verificação ocorreu nos dias 17 e 18 e 20 a 22 de março de 2021 de forma remota.

Total de emissões verificadas em toda a organização (Controle Operacional)

	Toneladas Métricas de CO_2 equivalente (tCO_2e)			
GEE	Escopo 1	Escopo 2 Abordagem baseada na localização	Escopo 2 Abordagem baseada em escolha de compra	Escopo 3 (se aplicável)
CO_2	7.127,513	299.014,924	-	1.861.511,229
CH_4	31,500	0,025	-	639,400
N_2O	95,956	0,000000	-	105,492
HFCs	522,358	-	-	25,050
PFCs	0,000000	-	-	0,000000
SF_6	912,000	-	-	0,000000
NF_3	0,000000	-	-	0,000000
TOTAL	8.689,327	299.014,949	-	1.862.281,171
CO_2 Biogênico	3.944,217	1,095	-	2.860,954

Total de remoções verificadas em toda a organização (Controle Operacional)

	Remoção de CO_2 biogênico (tCO_2e)			
GEE	Escopo 1	Escopo 2 Abordagem baseada na localização	Escopo 2 Abordagem baseada em escolha de compra	Escopo 3 (se aplicável)
CO_2 Biogênico	1.149,429	-	-	-

Inventário GEE - OVV
OVV 0005

Declaração de Verificação ABNT NBR ISO 14064-1

ABNT Associação Brasileira de Normas Técnicas
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DECLARAÇÃO DE CONFORMIDADE
Conformity Declaration

Comentários Adicionais

Foi adotado o procedimento de verificação remota através da utilização da plataforma Microsoft Teams para garantir um nível de confiança limitado ao processo de verificação.

Emissão de gases não regulamentados pelo Protocolo de Quioto:
HCFC-22 (R-22) = 295,826 tCO_2e

Conflitos de Interesse (CDI)

Eu, **Mariana Fellows Garcia**, certifico que nenhum conflito interesse existe entre **Eletropaulo Metropolitana Eletricidade de São Paulo S.A. (Enel Distribuição São Paulo)** e a **ABNT**, ou qualquer dos indivíduos membros da equipe de verificação envolvidos na verificação do inventário, conforme definido no capítulo *3.2.1 das Especificações de Verificação do Programa Brasileiro GHG Protocol*.

Mariana Fellows Garcia — 02/07/2021
(Verificador Líder) — Data
☒ Reconhecimento de assinatura digital[1]

Conclusão do Verificador sobre o Inventário de Emissões de GEE

Como responsáveis pelas atividades de verificação do inventário de GEE da **Eletropaulo Metropolitana Eletricidade de São Paulo S.A. (Enel Distribuição São Paulo)**, atestamos que as informações contidas neste documento são verdadeiras.

Mariana Fellows Garcia — 02/07/2021
(Verificador Líder) — Data
☒ Reconhecimento de assinatura digital[1]

Marina Brito — 02/07/2021
(Revisor Independente) — Data
☒ Reconhecimento de assinatura digital[1]

Autorização

Eu, **Natália Ribeiro Cruz,** aceito os resultados desta declaração de verificação.

Natália Ribeiro Cruz — 05/07/2021
Data
☒ Reconhecimento de assinatura digital[1]

Inventário GEE - OVV
OVV 0005

ABNT Associação Brasileira de Normas Técnicas
Av. Treze de Maio, 13 – 28º Andar – Centro – **Rio de Janeiro – RJ** – CEP 20031-901
Rua Conselheiro Nebias, 1.131 – Campos Elíseos – **São Paulo – SP** – CEP 01203-002

DECLARAÇÃO DE CONFORMIDADE
Conformity Declaration

Revisão

Revisão:	1
Justificativa para a alteração:	Inclusão dos valores de remoções biogênicas do Escopo 1

Rio de Janeiro, 02 de Julho de 2021.

Guy Ladvocat
Gerente de Certificação de Sistemas

[1]Ao marcar a caixa "Reconhecimento de assinatura digital", concordo que esta declaração de verificação seja considerada "feita por escrito" e "assinada" para todos os fins e que quaisquer registros eletrônicos serão considerados "feitos por escrito". Renuncio expressamente a todo e qualquer direito de negar a obrigatoriedade jurídica, a validade ou a executoriedade desta declaração de verificação e de quaisquer documentos a ela relacionados com base em que tenham sido elaborados e concluídos eletronicamente.

Esta declaração de verificação é suportada por contrato de atendimento à norma e procedimentos da ABNT é válido somente em original e com o timbre da ABNT em alto-relevo seco, assinado pelo Gerente de Certificação de Sistemas. Sua validade pode ser confirmada no seguinte endereço eletrônico: www.abnt.org.br. (CNPJ: 33.402.892/0001-06 – Tel.: (21) 3974-2300).

Inventário GEE - OVV
OVV 0005

ABNT Associação Brasileira de Normas Técnicas
Av. Treze de Maio, 13 – 28º Andar – Centro – **Rio de Janeiro – RJ** – CEP 20031-901
Rua Conselheiro Nebias, 1.131 – Campos Elíseos – **São Paulo – SP** – CEP 01203-002

Anexo II – Declaração de compromisso para Mudanças Climáticas

INTERNAL

Declaração de Compromisso para Mudanças Climáticas
Enel Distribuição São Paulo

A Enel Distribuição São Paulo se compromete com:

1. ENGAJAMENTO

Contribuir para uma economia de baixo carbono, buscando influenciar políticas públicas, fóruns empresariais e da sociedade civil organizada e a formação de parcerias estratégicas que contribuam para o avanço do tema.

2. REDUÇÃO DE EMISSÕES DE GEE

Buscar ativamente a redução da emissão de GEE em nossas atividades, por meio do uso prioritariamente de energias (combustíveis) renováveis, da redução de fontes emissoras representativas, da promoção da eficiência energética na cadeia de valor, e priorizar fornecedores com boas práticas de gestão das emissões de Gases de Efeito Estufa (GEE) e riscos climáticos.

3. INOVAÇÃO

Fomentar soluções estratégicas que gerem valor para nossos públicos, considerando riscos, oportunidades e tendências, para a adaptação e mitigação dos efeitos das mudanças climáticas em cidades inteligentes, adotando instrumentos de valoração que apoiem as decisões de negócio.

4. TRANSPARÊNCIA

Publicar periodicamente o inventário das emissões de GEE e as ações que a empresa desenvolve quanto aos compromissos para adaptação e mitigação dos efeitos das mudanças climáticas.

Anexo III – Certificado de cancelamento voluntário de créditos de carbono – Projeto REDD+ Jari-Pará

Certificate of Verified Carbon Unit (VCU) Retirement

Verra, in its capacity as administrator of the Verra Registry, does hereby certify that on 11 Dec 2020, 750 Verified Carbon Units (VCUs) were retired on behalf of:

Enel Distribuição São Paulo

Project name:

Jari/Pará REDD+ Project

VCU serial number:

9205-74283660-74284409-VCS-VCU-262-VER-BR-14-1811-08072015-07072016-0

Additional Certifications:

Additional details on this retirement can be found on the Verra Registry.

Powered by APX

Anexo III – Certificado de cancelamento voluntário de créditos de carbono – Projeto REDD+ Jari-Pará

COD. AC20208

AMIGO DO CLIMA

ENEL DISTRIBUIÇÃO SÃO PAULO 2020

CERTIFICADO

O **PROGRAMA AMIGO DO CLIMA** certifica que a **ENEL Distribuição São Paulo (Eletropaulo Metropolitana Eletricidade de São Paulo S.A.)** compensou as emissões de Gases de Efeito Estufa referentes ao Escopo 1 no ano de 2020. Foram compensadas **2250 tCO_2e** através do cancelamento voluntário de créditos de carbono no âmbito do Mecanismo de Desenvolvimento Limpo (MDL) vinculado à Convenção Quadro das Nações Unidas sobre Mudança do Clima (UNFCCC).. Detalhes sobre essa ação de responsabilidade climática podem ser acessados pelo website do programa *www.amigodoclima.com.br*, utilizando o código de rastreamento **AC20208**.

Belo Horizonte, 15 de dezembro de 2020.

Felipe Bittencourt
Programa Amigo do Clima

Anexo IV – Certificado de cancelamento voluntário de créditos de carbono – Projeto Bandeirantes Landfill Gas to Energy e Certificado empresa Amiga do Clima

Date: 09 December 2020
Reference: VC/0484/2020

United Nations
Framework Convention on Climate Change

VOLUNTARY CANCELLATION CERTIFICATE

Presented to:

CDM Project 0164: Bandeirantes Landfill Gas to Energy Project (BLFGE)

Reason for cancellation:

Cancelamento voluntário em nome da Enel Distribuição São Paulo (Eletropaulo Metropolitana Eletricidade de São Paulo S.A.) para compensação de emissões de gases de efeito estufa de escopo 1 relativas ao ano de 2020. / Voluntary cancellation on behalf of Enel Distribuição São Paulo (Eletropaulo Metropolitana Eletricidade de São Paulo S.A.) to offset scope 1 greenhouse gas emissions of 2020.

Number and type of units cancelled

2,250 CERs
Equivalent to 2,250 tonne(s) of CO2

Start serial number: BR-5-93571180-1-1-0-164
End serial number: BR-5-93573429-1-1-0-164

The certificate is issued in accordance with the procedure for voluntary cancellation in the CDM Registry. The reason for cancellation included in this certificate is provided by the canceller.

Anexo V – Relatórios de validação e verificação – Projeto REDD+ Jari-Pará

VCS VERIFICATION REPORT: *VCS Version 3*

VERIFICATION REPORT JARÍ/PARÁ REDD+ PROJECT

RINA SERVICES S.p.A.

Project Title	Jari/Pará REDD+ Project
Version	1
Report ID	18BQ41MD

Report Title	VCS Verification Report Jari/Pará REDD+ Project
Client	Biofílica Investimentos Ambientais S.A
Pages	55
Date of Issue	27-11-2019
Prepared By	RINA Services S.p.A. (RINA)
Contact	Via Corsica 12 – 26124 GENOVA (Italy), +39 0105385730 ghg_services@rina.org www.rina.org
Approved By	**Laura Severino** (Authorized officer signing for the DOE) Head of Certification Innovation & Sustainability Unit
Work Carried Out By	Lead Assessor and Technical Expert: Talita C. BECK (Rina Brazil – external auditor) Technical Reviewer and Technical Expert: Rekha Menon (Rina Índia – external TR)

VCS VERIFICATION REPORT: *VCS Version 3*

Summary:

RINA Services S.p.A. (RINA), commissioned by Biofílica Investimentos Ambientais S.A., verified the greenhouse gas emission reductions reported for the project activity “REDD+ Jari/Pará Project” in Brazil, with regards to relevant requirements for VCS rules.
The objective of the verification is to have an independent review ex post determination of the monitored reductions in GHG emission reductions, Verification was conducted using RINA procedures in line with the requirements specified in the VCS Version 3 Requirements and applying standard auditing techniques. The verification consisted of desk review, on-site assessment and the resolution of outstanding issues and the issuance of the final verification report and certification
The verification shall ensure that reported emission reductions are complete and accurate in accordance with applicable VCS requirements in order to be certified.
This is the first verification assessment of REDD+ Jari/Pará Project for the Monitoring Period of 08/07/2014 to 22/10/2017. RINA has simultaneously carried out the Validation and Verification visits for this project and will issue separate Validation and Verification Reports.
The GHG emission reductions were calculated on the basis of the approved methodology VCS VM0015 Methodology for Avoided Unplanned Deforestation v1.1 of 03/12/2012 and the monitoring plan included in the validated VCS PD v5.1 of 07/10/2019.

In conclusion, it is RINA’s opinion that the project activity “REDD+ Jari/Pará Project” in Brazil, meets all relevant requirements for VCS standard and guidelines and correctly applies the baseline and monitoring methodology VCS VM0015 Methodology for Avoided Unplanned Deforestation v1.1 of 03/12/2012. The monitoring system is in place and the emission reductions are calculated without material misstatement. Hence, RINA is able to certify that the emission reductions from the project during the monitoring period 08/07/2014 to 22/10/2017 amount to 1,012,082 tCO2e and that tradable VCUs are 900,753tCO2e.

Abreviations

AFOLU	Agriculture, Forestry and Other Land Use
AUD	Avoided Unplanned Deforestation
AUTEX/ AUTEF	Authorisation for the Exploration of Sustainable Forest Management Plan (from the Portuguese Autorização para Exploração de Plano de Manejo Florestal Sustentado)
CAR	Corrective Action Request
CL	Clarification Request
CO2	Carbon Dioxide
CO2e	Carbon dioxide equivalent
GHG	Greenhouse Gas
I	Interview
IBAMA	Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis (Brazilian Institute for the Environment and for the Renewable Natural Resources)
INPE	Instituto Nacional de Pesquisas Espaciais (National Institute for Space Reaserch)
IPCC	Intergovernmental Panel on Climate Change
LAR	Rural Activity License (from the Portuguese Licença de Atividade Rural)
PA	Project Area
PD	Project Description
PP	Project Proponent
Pronaf	National program for strengthening of agriculture (from the Portuguese: Programa nacional de fortalecimento da agricultura)
NTFPs	Non-Timber Forest Products
LKB	Leakage Belt
REDD	Reduced Emissions from Deforestation and Degradation
RR	Reference Region
SEMAS	Secretariat of Environment and Sustainability of the State of Pará (from the Portuguese Secretaria do Meio Ambiente e Sustentabilidade)
SFMP	Sustainable Forest Management Plan
UPA	Annual Production Unity (from the Portuguese Unidade de Produção Anual)
VCS	Verified Carbon Standard
VCUs	Voluntary Carbon Units

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1 INTRODUCTION

1.1 Objective

RINA has been commissioned by "Biofílica Investimentos Ambientais S.A." to perform an independent verification of its VCS project, "Jari/Pará REDD+ Project", for the reported GHG emission reductions for the monitoring period between July 8th, 2014 to October 22nd, 2017. The VCS projects must undergo independent third party verification and certification of emission reductions as the basis for issuance of Voluntary Emission Reductions (VERs/VCUs).

The objectives of this verification exercise are, by review of objective evidence, to establish that:

- The project activity has been implemented and operated as per the project description (PD) and that all physical features (technology, project equipment, and monitoring equipment) of the project are in place;
- Monitoring report and other supporting documents are complete;
- The data is recorded and stored as per the monitoring methodology and approved monitoring plan.
- To confirm that the monitoring system is implemented and fully functional to generate Voluntary Emission Reductions (VERs/VCUs) without any double counting, and
- To establish that the data reported are accurate, complete, consistent, transparent and free of material error or omission by checking the monitoring records and the emissions reduction calculation.

1.2 Scope and Criteria

The verification scope is:

- to verify that actual monitoring systems and procedures are in compliance with the monitoring systems and procedures described in the monitoring plan;

- to evaluate the GHG emission reduction data and express a conclusion with a reasonable level of assurance about whether the reported GHG emission reduction data is free from material misstatement;

- to verify that reported GHG emission data is sufficiently supported by evidence.

The project is assessed against the requirements of VCS version 3 and related rules and guidance. RINA has, based on the recommendations in the latest version of CDM Validation and Verification Manual, employed a rule-based approach (as criteria) in the verification, focusing on the identification of significant reporting rules and the reliability of project monitoring.

Verification is not meant to provide any consultancy towards the project participants. However, stated requests for clarifications and/or corrective actions may have provided input for improvement of the monitoring.

1.3 Level of Assurance

All the revisions of the verification report before being submitted to the client were subjected to an independent internal technical review to confirm that all verification activities had been completed according to the pertinent RINA instructions, with reasonable level of assurance.

The technical review was performed by a technical reviewer(s) qualified in accordance with RINA's qualification scheme for VCS and CDM validation and verification.

The verification team and the technical reviewers consist of the following personnel.

Role	Last Name	First Name	Country
Lead Asessor and Technical Expert – Scope 14.1	C. BECK	Talita	External Auditor - Rina Brazil
Technical Reviewer and Technical Expert – Scope 14.1	MENON	Rekha	External – Rina India

1.4 Summary Description of the Project

The primary objective of the Jari/Pará REDD+ Project is to avoid unplanned deforestation (AUD) in the 496,988 ha of the Project Area (PA), shown in figures 10 and 15 of the PD v4.1 /7/, and validated in sections 1.12.47 and 1.13.3 of the Validation Report v02Aa /8/ to be inside the following properties (also shown in table 16 of the PD v4.1./7/): Alzira Antunes Martins, Ayres Julio da Fonseca, Benedito de Oliveira Feitosa, Cajueiro Serra de Almeirim, Campo Saracura, Castanhal do Urucurituba, Crispim Joaquim de Almeida, Fazenda Saracura, Flávia Freitas de Almeida Maia, José Fernandes Fonseca, Maria de Nazare de Almeida Guedes, Panama ou Mapau, Pau Grande, Santo Antonio da Cachoeira, Santo Antônio do Urucurituba, Serra Grande, Terra Preta do Castanhal.

The process carried out to validate the coordinates of these properties are described in section 1.13.3 of the Validation Report v02Aa /8/. The coordinates, shown in fig.15 of the PD v4.1 /7/, were confirmed to be situated in the municipality of Almeirim, in the State of Pará, Legal Amazon Region of Brazil. This information is also shown in section 1.7 of the Monitoring Report /10/.

The project proponentes are Biofílica Investimentos Ambientais S.A., Jari Celulose S.A. and Fundação Jari. The proponents started the implementation (initial studies, communities mobilisation and agroforest systems) of a multiple use forest management in the area, with non-timber forest products extraction for local communities and sustainable forest timber extraction for Jarí Celulose, as well as extra monitoring activities for the protection of the forest in the project area.

Project Proponent(s)	Biofílica Investimentos Ambientais S.A., Jari Celulose S.A. and Fundação Jari.
Project Title	Jari/Pará REDD+ Project
Location of the project	The Project area Properties: Alzira Antunes Martins Ayres Julio da Fonseca Benedito de Oliveira Feitosa Cajueiro Serra de Almeirim Campo Saracura Castanhal do Urucurituba Crispim Joaquim de Almeida Fazenda Saracura Flávia Freitas de Almeida Maia José Fernandes Fonseca Maria de Nazare de Almeida Guedes Panama ou Mapau Pau Grande Santo Antonio da Cachoeira Santo Antônio do Urucurituba Serra Grande Terra Preta do Castanhal Municipality: Almeirim
Methodology(ies)	VM0015 Methodology for Avoided Unplanned Deforestation v1.1 of 03/12/2012
Sectoral Scope(s)	14
Project's crediting period	from 08/07/2014 until 07/07/2044

2 VERIFICATION PROCESS

This is the first verification assessment of Jari/Pará REDD+ Project for the Monitoring Period of 08/07/2014 to 22/10/2017.The Project is being verified by RINA who also carried out the Validation. RINA will issue almost simultaneously but separately Validation /08/ and Verification Reports.

2.1 Method and Criteria

Verification was conducted using RINA's procedures in line with the requirements specified in the VCS Requirements, (i.e. VCS Program Guide v3.7 /1/, VCS Validation and Verification Manual v3.2 /3/ and AFOLU Requirements v3.6 /5/). The GHG emission reductions are on the basis of the approved baseline and monitoring methodology VCS VM0015 Methodology for Avoided Unplanned Deforestation v1.1 of 03/12/2012 /4/.

The verification consisted of the following three phases

• Document review;

• On site assessments including inspections and interviews, and site assessments using satellite image and GIS (all data, no sampling);

• Resolution of any material discrepancy and the issuance of the final verification report and certification.

The following sections outline each step in more detail.

2.2 Document Review

The monitoring report (MR) versions 1 to 4 of 29/10/2019 /10/, the emission reduction calculations spreadsheet version 3 and v4 /11/, were assessed against documents referenced below as part of the verification. All documents are cited throughout the report.

Below is a list of documents reviewed during verification:

/1/	VCS Program Guide – Requirement documents v3.7 of 21/06/2017
/2/	VCS Standard Version 3.7 of 21/07/2017
/3/	VCS Validation and Verification Manual v3.2 of 19/10/2016;
/4/	VCS VM0015 Methodology for Avoided Unplanned Deforestation v1.1 of 03/12/2012
/5/	AFOLU Requirements, v3.6 of 21/06/2017
/6/	AFOLU_Non-Permanence_Risk_Tool_v3.3 of 16/10/2016
/7/	PD_JariPara_VCS_CCB_v.3.0_eng_4.1 dated 01/07/2019 PD_JariPara_VCS_CCB_v.3.0_eng_5.1 dated 07/10/2019
/8/	Validation Report of the Jari/Pará REDD+ Project v03Aa of 15/10/2019
/9/	VCS-Monitoring-Report-Template-v3.4
/10/	Jarí/Pará REDD+ Project Monitoring Report V1 13/11/2018 Jarí/Pará REDD+ Project Monitoring Report V2 02/09/2019 Jarí/Pará REDD+ Project Monitoring Report V3 22/10/2019 Jarí/Pará REDD+ Project Monitoring Report V4 29/10/2019

	Jarí/Pará REDD+ Project Monitoring Report V5 24/11/2019
/11/	ER Calculations_VCS MonitoringReport JariPara_2015_17_v3 ER Calculations_VCS MonitoringReport JariPara_2015_17_v4
/12/	Jari Para - VCS-Risk-Report-Calculation-Tool-v3.2
/13/	Rural Activity License N°651 of July 2009
/14/	Rural Activity License N° 3152 of October 2014
/15/	Jarí/Amapá REDD+ Project VCS webpage https://www.vcsprojectdatabase.org/#/project_details/1115 last accessed 13/08/2016
/16/	Casa da Floresta "Regional contextualisation and work plan - socioeconomic module - REDD+ Project Jari Pará" 2016.
/17/	Casa da Floresta "Final Report Biodiversity Assessment - REDD+ Jarí Pará Project" 2016
/18/	Casa da Floresta "Final Report Characterization of the Physical Environment - REDD+ Jarí Pará Project" 2016
/19/	Jarí/Pará Monitoring Bulletin 2015, 2016 and 2017 dated August 2018
/20/	Invasion records Year 2015 (from the portuguese "Planilha de Invasão - ANO 2015")
/21/	Invasion reports Year 2016 1st semester
/22/	Invasion reports Year 2016 2nd semester
/23/	PRODES DIGITAL_WEBPAGE www.dpi.inpe.br/prodesdigital last accessed on 13/08/2019
/24/	VCS Errata-and-Clarifications-VM0015-v1.1-03-NOV-2017
/25/	Validação_prodes_1.0_excel file
/26/	Prodes_PA_excel file
/27/	Prodes_LKB_excel file
/28/	Analise PRODES_AP_LKB_excel file
/29/	Main road maps for UPA 9 Estradas_09_areaprinc.shp
/30/	Secondary road maps for UPA 9 Estradas_09_arearamal.shp
/31/	Forest patios area register (Patios florestais por UPA.xlsx)
/32/	Jari Para - VCS-Non-Permanence-Risk-Report_4.0
/33/	PRODES_AP_data
/34/	Orsa Florestal - Relatório de Atividade Pós-Exploratório POA 06 of 08/07/2013
/35/	Orsa Florestal - Relatório de Atividade Pós-Exploratório UPA 07 of 18/10/2013
/36/	SEMAS - Processing History of Annual Production Unit 08 created in 19/11/2012
/37/	SEMAS - AUTEF (from the Portuguese, Authorisation for the Exploration of Sustainable Forest Management Plan) for UPA 08 dated 27/06/2013 valid till 27/06/2014
/38/	SEMAS - AUTEF Extention (from the Portuguese, Authorisation for the Exploration of Sustainable Forest Management Plan) for UPA 08 dated 27/06/2013 valid till 27/06/2015
/39/	SEMAS - Processing History of Annual Production Unit 09 created in 02/04/2014
/40/	SEMAS - AUTEF (from the Portuguese, Authorisation for the Exploration of Sustainable Forest Management Plan) for UPA 09 dated 14/10/2014 valid until 14/10/2015
/41/	SEMAS - AUTEF (from the Portuguese, Authorisation for the Exploration of Sustainable Forest Management Plan) for UPA 09 dated 21/02/2017 valid until 21/02/2018

/42/ State Justice Court of Pará - Judgement rendered in September 2016.

/43/ Jarí Celulose - Surveillance of the land area ver.16 of 28/11/2018

/44/ Jarí Celulose - Surveillance of the land area ver.11 of 25/09/2013

/45/ Grupo Jarí - Surveillance of the land area report of 19/05/2015

Grupo Jarí - Surveillance of the land area report of 15/06/2015

/46/ Grupo Jarí and Fundação Jarí - Social Environmental Agents Report for the II Quarter of 2017

Grupo Jarí and Fundação Jarí - Social Environmental Agents Report for the IV Quarter of 2017

/47/ Land surveilance of High Conservation Value Areas - Planalto Springs - (from the Portuguese "Vistoria Fundiaria AAVC - Nascente Planalto - Maio - 2016"

/48/ Record of land invasions 2nd Semestre 2014 (from the Portuguese "Planilha Invasões - 2o Semestre - 2014")

/49/ Fundação Jarí. Human sustainable development in the Amazon, Impact Report 2016

/50/ Fundação Jarí. Human sustainable development in the Amazon, Impact Report 2017

/51/ Sustainable Forest Management Plan dated 2016

/52/ Emater and Fundação Jarí - ATER first semester of 2015 report

/53/ Pronaf - self aptitude statement filled by José Almir Caldeira Brazão, small land holder of Santo Antonio community on 03/06/2017

/54/ CDM Guidelines on the assessment of different types of changes from the project activity as described in the registered PDD of 17 July 2009.

/55/ Jarí Foundation Website page describing prizes wined – Year 2005 http://www.fundacaojari.org.br/pt/linha_do_tempo.aspx last accessed 24/11/2019.

/56/ UPA 09 roads and patios map protocolled at SEMAS by Jarí.

/57/ Patrimonial Surveillance Activity Control 2014
Patrimonial Surveillance Activity Control 2015
Patrimonial Surveillance Activity Control 2016
Patrimonial Surveillance Activity Control 2017

2.3 Interviews

The key personnel interviewed and the main topics of the interviews are summarized in the table below:

Date	Name and Role	Organization	Topic
11/12/2018 and 12/12/2018	Arnaldo Santos Agronomist	Fundação Jarí	Relationship Jari and local communities.
11/12/2018	José Jussian da Silva Native forestry technician	Fundação Jarí and local resident	Survey of potential areas of Brazil nuts
11/12/2018	Otacílio França Alves Community leader	Cafezal (community in the PA directly involved in the activities of the Jarí Para REDD+ Project)	Community activities and views regarding the Jarí Para REDD+ Project
	and Brazil Nuts collector		
11/12/2018	Sidiana Paixão Teacher	Cafezal (community in the PA directly involved in the activities of the Jarí Para REDD+ Project)	Jarí Para REDD+ Project and education
11/12/2018	Maria Zilda Resident	Cafezal (community in the PA directly involved in the activities of the Jarí Para REDD+ Project)	Jarí Para REDD+ Project and gender equality
11/12/2018	Edson Fonseca Santos Community leader	Recreio (community in the PA directly involved in the activities of the Jarí Para REDD+ Project)	Jarí Para REDD+ Project
11/12/2018	Iderlio G da Silva President of the Amoruré Association	Recreio (community in the PA directly involved in the activities of the Jarí Para REDD+ Project)	Jarí Para REDD+ Project
12/12/2018	Davi Environmental Department	Jarí Celulose	Environmental Licenses
18/12/2018	Edson Francisco dos Reis Lanes Patrimonial Security	Jarí Celulose and Fundação Jarí	Forest and biodiversity patrolling
14/02/2019	Luana Cordeiro Analist	Biofílica	MR, Satellite data acquisition and processing with GIS (measurement of carbon change), Calibration of data (QA &QC), Records and Storage of data, ER Calculations, Non-permanence risk, Actual implementation as per PD
14/02/2019	Caio Gallego Project Coordenator	Biofílica	Non-permanence risk

2.4 Site Inspections

The site inspection of the Project Area in Pará was carried out between 10/12/2018 and 19/12/2018. The onsite visit was performed in order to understand and evaluate the project area and the reference region as well as the leakage belt and leakage management areas.

Unexplored as well as explored parts of the project area were visited in order to visualise biomass and validate the baseline carbon stock estimates that area later used for ER estimates in the verification process too. An interview with Jari security staff was carried out to understand the implementation of the extra activities regarding monitoring and ground patrolling of unplanned deforestation.

The town of Monte Dourado was visited and communities that utilise non-wood-forest-products, involved and not involved in the initial activities of the project activity, were interviewed to make sure practices described in the PD /7/ were in place in the whole of the project zone. Thus, it was possible to assess the condition of the forest areas of the project, the socioeconomic dynamics of the reference region and the field monitoring implementation from data collection up to the production of the Monitoring Report.

The visit to the offices of Jarí Celulose and Biofílica in São Paulo were carried out between the 12/02/2019 and 15/02/2019. There the monitoring by remote sensing and GIS analysis were shown to the verification team.

2.5 Resolution of Findings

The objective of this phase of the verification is to resolve any outstanding issues, which need to be clarified for RINA's positive conclusion on the monitoring report and emission reductions.

A corrective action request (CAR) is raised if one of the following occurs:

• Non-conformities with the monitoring plan or methodology are found in monitoring and reporting, or if the evidence provided to prove conformity is insufficient;

• Mistakes have been made in applying assumptions, data or calculations of emission reductions that will impair the estimate of emission reductions;

• Issues identified in a FAR during validation to be verified during verification have not been resolved by the project participants.

A clarification request (CL) is raised if information is insufficient or not clear enough to determine whether the applicable VCS requirements, which refer to CDM rules, have been met.

In this verification 8 CARs and 1 CL were identified. These and the resolution of these are included in Appendix 1 of this report.

2.5.1 Forward Action Requests

Rina has carried out the Validation activities of Jarí/Pará REDD+ Project simultaneously to the activities of the first VCS Verification.

One FAR was raised during the validation, this FAR has to do with extra requirements of the CCB standard, comparing to VCS standard, with regards to effective communities consultation and free prior informed consent, which is not in the VCS standard and therefore is to be resolved by the first verification of the CCB Standard (which can be carried out separately). The text of this FAR can be seen on the validation report /8/ approved, and already registered in the VCS webapage.

One FAR was raised during this first verification. This FAR can be seen in Appendix 1 of this report.

2.6 Eligibility for Validation Activities

Rina has carried out the Validation activities of Jarí/Pará REDD+ Project simultaneously to the activities of the first VCS Verification. The VCS Validation Report of the Jarí/Pará REDD+ Project by Rina /8/ was issued to the client just before the issuance of this Verification Report.

3 VALIDATION FINDINGS

For the Validation activities please see VCS Validation Report Jarí/Pará REDD+ Project by Rina /8/.

3.1 Participation under Other GHG Programs

Not applicable as stated in sections 2.5.12, 2.5.13 and 2.5.14 of the VCS PD of Jarí/Pará REDD+ Project the "Jari/Pará REDD+ Project did not receive or sought to be registered in any other GHG program, in addition to submitting the Project to validation and verification in the VCS (Verified Carbon Standard) and CCBS (Climate, Community and Biodiversity Standard)" and the "Project is not intended to generate any other form of environmental credits related to the reductions and removals of GHG emissions claimed under the VCS (Verified Carbon Standard) program.".

3.2 Methodology Deviations

The VVB observed no methodological deviations during the process of verification of this monitoring period.

3.3 Project Description Deviations

The activity "*deforestation monitoring via satellite imagery"*, listed in table 10 of the PD/7/, was carried out for the purposes of ERs calculations but not for the generation of the Annual Deforestation Bulletins. The annual bulletins were a short term output, which were implemented in 2018 /19/, and in turn had the following medium term outputs: "greater understanding of deforestation dynamics to conduct a more effective patrimonial surveillance", "Providing inputs for the design of field interventions" and "Improvement of the techniques of forest monitoring activities". Because of the delay on the generation of these bulletins, the activity was not reported in the Monitoring Report /10/. This was then justified in section 2.2.2 of the Monitoring Report v 4 of 29th October 2019 /10/.

The VVB checked that this action of internally reporting the location of deforestation was replaced by other deforestation mitigating activities which were not planned to start during this first monitoring period, but to begin after 2019. These actions refer to the theme "*Technical Assistance and Rural Extension (TARE)*" which involved the activities of Strengthening Family Agriculture and Sustainable Extractivism through the implementation of the SAF projects /49//50//52//53/, and the Environmental Education Program, with the holding of workshops for the prevention of environmental degradation by communities /46/.
The VVB then agrees that, the replacement of one activity by another in time, anticipating activities planned for 2019 to 2015 /49//50//52//53/, and the implementation of the activity planned for 2015 in 2018 /19/, show that no impact on additionality occurs. That is, the extra costs with activities like technical assistance for agroforestry, besides the costs with sustainable timber extraction, which are not included in the alternative scenario (the forest management, only with timber extraction) and which help to mitigate deforestation will carry on higher than in the alternative scenario, regardless of changes in implementation dates of such activities, as these are extra activities to forest management.
The VVB also agrees that the change does not impact applicability of the methodology AM0015 /4/ since the project activity continued, throughout the delay, to be "forest protection with controlled logging" and baseline scenario continued as per baseline in the PD v 5.1 /7/. This is therefore in accordance with the VCS Standard v3.7 /2/ and the CDM Guidelines on the assessment of different types of changes from the project activity as described in the registered PDD /54/.

3.4 Grouped Project

This project is not a grouped project. Hence, this section is not applicable.

4 VERIFICATION FINDINGS

4.1 Project Implementation Status

The project area is located within the private properties listed in section 1.4 (Summary Description of the Project Activity) of this report, in the municipality of Almeirim, in the state of Pará. The geographical coordinates of the project are shown in fig.15 of the PD v5.1 /7/ and have been checked during validation, as per Validation Report /8/, which has been carried out at the same time as this verification process.

The project activity is under sectoral scope 14 (Agriculture, Forestry, Land Use). In accordance with VCS requirements, stipulated in Approved VCS Methodology VM0015, version 1.1./4/ The project proponents are Biofílica Investimentos Ambientais S.A., Jari Celulose S.A. and Fundação Jari. The project developers are Biofílica Investimentos Ambientais S.A. in consultation with BRGEO, Harmonia Socioambiental e Florestal Recursos Manejo Brasil Consultoria e Assessoria Ltda. (FRM BRASIL).

The 496,988 ha of the forest in the PA are managed by the project proponents for multiple uses. Project start date is the 8th of July 2014 as per validation report /8/, when an addendum to the contract between Jarí and Biofílica was signed in order to expand the project Jarí/Amapá REDD+ Project /15/ into the area held by Jarí in the state of Pará.

During the first monitoring period which goes from the Project starting date until 22nd of October 2017, besides conducting initial socioeconomic /16/ and environmental studies (including biodiversity assessment of the area) /17//18/, which suggested the types of actions relating to social inclusion aimed at reducing forest loss, the PPs also adopted, since 2015, as seen from surveillance records /45/ new procedures for surveillance /43/ compared to previous version of the same procedure /44/. The VVB confirms that the new procedure /43/ now mentions surveillance activities to be carried out in the REDD+ framework as well as previous patrimonial surveillance activities and that patrol records evidence, with reasonable level of assurance, that the procedures are being put into place /45//47//48/. These records have information on deforestation that can be used to better understand forest loss and its dynamics. This surveillance and its feedback to Fundação Jarí's technical team is listed in table 10 of the PD v5.1 /7/.

The VVB also checked the reports on educational activities about environmental legislation and controlled fire as well as risks of forests uncontrolled fires during 2017 /46/, with the local communities initially involved in the project activities

Despite this connection between evidence of improved patrolling and necessary courses and field patrol actions, for the next verification, the PP is required to make procedures clearer about the feedback that the surveillance team should be giving to the technical teams that work with the local communities, about deforested areas in possession of local communities, as well as the forestry team, already in the procedure "Surveillance of the land area" /43/. A FAR was opened for the next VCS verification (see Appendix 1).

The validation team observed no material discrepancies between the monitoring plan in the PD /7/ and its implementation. Vector data published by PRODES /23/ every year were used by Biofílica to calculate achieved ERs. A list of the parameters monitored and how they have been verified are presented below in section 4.3 of this report.

The PP provided the following rural activity licenses for the period: N°651 valid from July 2009 to July 2014 /13/ and N°3152 valid from October 2014 to October 2019 /14/. Furthermore, the following AUTEFS (Authorisation for the Exploration of Sustainable Forest Management Plan) issued by Secretariat of Environment and Sustainability of the State of Pará (SEMAS) were issued for the 2 UPAs (annual production units, logged during the monitoring period): 1) UPA 8 AUTEF N°20140/2013 dated 27/06/2013 valid till 27/06/2014, later extended from 27/06/2014 till 27/06/2015 /37//38/; 2) UPA9 AUTEF N°27936/2014 issued on 14/10/2014 and valid until 14/10/2015 /40/ and AUTEF N°272981/2017 issued on 21/02/2017 and valid till 21/02/2018 /41/.

As per validation report v3 /8/ the VVB saw no evidence that the GHG emission reductions or removals generated by the project have become included in a different emissions trading program or any other mechanism that includes GHG allowance trading.

The VVB confirms that through the verification process it became confident that the PP correctly chose the Contribution to the UN Sustainable Development Goals it helps to achieve. These are listed in table 1 of the Monitoring Report v4 /11/

With regards to sustainable development goal 2, Zero Hunger, the VVB checked the information on the MR v4 /10/ which states that during the monitored years, Fundação Jari carried out the implementation of agroforestry systems (SAFs in Portuguese) in the municipalities of Monte Dourado and Almeirim, contributing to increased productivity and diversification of family production through the rationalized use of already altered areas, combating and mitigating deforestation. The VVB verified this activity through the evidence sent by PPs, Fundação Jari's Impacts Report 2016 /49/ and Impacts Report 2017 /50/. The VVB reviewed this documentation with information regarding the activities of Fundação Jari in those years and confirms that the reports state that the Fundação was successful in helping communities of Almeirim to acquire rural credit to the SAFs in those years in the sum of R$ 739,253 in 2016 and R$ 2,105,992.

The VVB also checked Emater and Fundação Jarí - ATER first semester of 2015 report /52/ which states the SAFs objectives and brings 2015 results on the Project's actions in the communities of Almeirim and Monte Dourado, more specfically Serra Grande/Recreio Community which is listed in the PD /7/.

Furthermore, the VVB checked one of the self-aptitude statements presented by the PP /53/ as evidence of the assistance Fundação Jarí gave to families, small holders of land, in constructing a plan needed to access rural investments and has met and interviewed Fundação Jari´s agronomist who liaises with communities.

The statement on sustainable development goal 4, quality education, was checked from reports on educational activities about environmental legislation and controlled fire as well as risks of forests uncontrolled fires during 2017 /46/, with the local communities initially involved in the project activities. These reports have photos, list of attendance and didactic material on the courses.

During the site visit the VVB checked that gender equality, that is, sustainable development goal 5, is supported through the encouragement of woman on consultations, meetings and courses.

Evidence of responsible consumption and production was obtained from interviewing , Fundação Jari´s native forestry technician and local resident who is helping in the survey of potential areas of Brazil nuts.

The Project's main objective is to reduce forest emissions from avoided unplanned deforestation, and in this monitoring period it was seen to reduce 1,012,082 tCO2 e as will be seen in subsequent sections. It is thus evident that the project contributes to sustainable development goal 13, climate action, and 15 life on land.

Apart from the deviation in dates of the introduction of internal reporting by the Surveillance team with the production of bulletins from the data published by PRODES /23/, already discussed in section 3.3, which does not impact additionality, applicability and baseline scenario, and which has been implemented in 2018 /19/, the VVB confirms that the project has been implemented as per PD v 5.1 /7/.

4.2 Accuracy of GHG Emission Reduction and Removal Calculations

- **Baseline Carbon Stock Change:**

The methods and formulae used to calculate total net carbon stock changes in the baseline scenario in the project area in the years 2015, 2016 and 2017 were already checked during validation /8/ and thus, for the verification these values were simply crosschecked with the values in the validated PD /7/. The actual values verified are presented in the table with the ex-ante parameters of section 4.3 of this report below. Since the validation and the verification visits were carried out simultaneously and the estimates in the baseline of the PD /7/ have changed, the estimates of the baseline carbon stock change had to be corrected in the Monitoring Report too so CAR4 was opened.The PPs changed the values of the estimated total net carbon stock changes in the MR v3 /10/ to reflect the ones in the registered PD version 5.1 dated 07/10/2019 /7/. The table in section 4.3 with the ex-ante parameters show both initially reported and actually verified values now in the latest version of the MR v4 /10/.

- **Project Emissions:**

The calculation of the ex post net carbon stock change in the project area under the project scenario is as follows.

$$\Delta CPSPA_t = \Delta CUDdPA_t + \Delta CPAdPA_t - \Delta CPAiPA_t$$

Where,

ΔCPSPAt Sum ex post actual carbon stock changes in the project area at year t; tCO2e

ΔCUDdPAt Total ex post actual carbon stock change due to unavoidable unplanned deforestation at year t in the project area; tCO2e

ΔCPAdPAt Total decrease in carbon stock due to all planned activities at year t in the project area; tCO2e

ΔCPAiPAt Total increase in carbon stock due to all planned activities at year t in the project area; tCO2e

As the Project foresees no planned activities that will result in increased carbon stocks the last part of the equation (- $\Delta CPAiPAt$) was 0. This is considered conservative by the applied methodology /4/.

1) Unplanned:

a) The carbon stock decrease due to unplanned deforestation in the project area was calculated using the following equation:

$$\Delta \text{CUDdPA}_t = \sum_{y=1}^{t}\left(\sum_{icl=1}^{icl} AUDPA_{icl,y} * \Delta Ctot_{icl,t-y} - \sum_{fcl=1}^{fcl} AUDPA_{fcl,y} * \Delta Ctot_{fcl,t-y}\right)$$

Where,

ΔCUDdPA*t* Total ex post actual carbon stock changes due to unavoidable unplanned deforestation in the project area at year t; tCO2e

AUDPA*icl, t* Area of unplanned deforestation in forest class icl at year t in the project area; ha

ΔCtot *icl, Ac* Lost carbon stock in the initial forest class icl at the age of change Ac (number of years after the change of use and soil cover) in tCO2;

AUDPA*fcl, t* Areas of post deforestation in the project area at time t; ha

ΔCtot*fcl, Ac*: Gained carbon stock in the post deforestation area at the age of change Ac (number of years after the change of use and soil cover) in tCO2.

Both unplaned deforestation area (**AUDPA*icl,t***) and the carbon stock lost in that area (***Ctot icl, Ac)*** values and assessment are reported in section 4.3 below. The former in "*Parameters and Data Monitored*" and the latter in *"Parameters Available at Validation and Fixed Ex-ante"*. The area of unplanned deforestation (***AUDPAfcl, t)*** becomes the post deforestation area (***AUDPAicl,t),*** as soon as it is deforested. In the year subsequent to deforestation, this area is multiplied by the post deforestation carbon stock increase per year (to account for regeneration), which is calculated according to the applied methodology /4/ and the VCS Errata-and-Clarifications-VM0015-v1.1 /24/ using the **Ctot*fcl***, **Ac** value reported below in section 4.3 in "*Parameters Available at Validation and Fixed Ex-ante*"**.**

The calculation for the value of **ΔCUDdPAt** was verified in the ERs spreadsheets /11/ and the following values confirmed.

Project Year t	**ΔCUDdPA$_t$ Annual (tCO_2e)**
2015	**152.870**
2016	**51.463**
2017	**76.378**

Non-CO2 emissions from forest fires are not accounted for as the PP justified in table 24 of the registered PD /7/, which shows the included and excluded sources of GHG within the boundary of the proposed Project activity, that this source of emissions were not considered significant. This information was already validated /8/ to be in accordance with section 1.4 of the applied methodology VM0015 /4/. The validation report explains that table 24 of the PD correctly excludes biomass burning as a source of GHG included in the proposed Project Activity as any CO2 emissions from burning will be accounted as changes in carbon stocks and non-CO2 emissions are considered insignificant (CH4 as per PP reasonable assumptions in the PD /7/ and Schroeder *et al.* 2009 also cited in the PD /7/, and in the validation report /8/, and N2O as per table 4 of the VM0015 itself /4/).

2) Planned Activities:

a) Planned Deforestation:

The carbon stock decrease, and therefore emissions, due to planned deforestation in the project area was calculated using the following equation:

$$\Delta CPDdPAt = (APDPAicl,t \times Ctoticl)$$

Where,

ΔCPDdPAt Total decrease in carbon stock due to planned deforestation at year t in the project area; tCO2e

APDPAicl,t Areas of planned deforestation in forest class icl at year t in the project area; ha

Ctoticl Average carbon stock of forest class icl at time t; tCO2e/ha

Both planned deforestation area ***APDPAicl,t*** and average carbon stock ***Ctoticl*** values and assessment are reported in section 4.3 below. The former in "*Parameters and Data Monitored*" and the latter in *"Parameters Available at Validation and Fixed Ex-ante"*.

For ***ΔCPDdPAt*** the following results were verified in the ERs spreadsheets /11/:

Project Year t	annual $\Delta CPAdPA_t$ tCO_2e
2015	30.286
2016	0
2017	0

b) Planned logging activities

The VVB checked the latest Forest Management Plan /51/ and confirms that with regards to logged wood the types are intended to building which are high density and long lived. According to VCS VM0015 methodology /4/ long-term fraction is assumed to never decay (i.e. it never results in an emission) and therefore the PP has correctly not considered emissions in wood from logging activities as per section 4.2.2 of the Monitoring Report v4 /10/.

c) Planned degradation

x Although an option given by the methodology as a Project Activity, charcoal production or firewood collection are not going to be introduced by the project activity as per section 3.2.2 of the PD v5.1 /7/.

X

- **Leakage**

Leakage formula used was:

$$\Delta CBSLLK_t = \sum_{y=1}^{t}\left(\sum_{icl=1}^{icl} AUDLK_{icl,y} * \Delta Ctot_{icl,t-y} - \sum_{fcl=1}^{fcl} AUDLK_{fcl,y} * \Delta Ctot_{fcl,t-y}\right)$$

Where:

$\Delta CBSLLK_t$: Total carbon stock changes due to unavoidable unplanned deforestation in the area of the Leakage Belt in year *t*;

$AUDLK_{icl,y}$: Unplanned deforestation area in the initial forest class *icl* in year t in the area of the Leakage Belt in the Projectscenario;

$\Delta Ctot_{icl,Ac}$: Loss in the carbon stock in the initial forest class *icl* at the age of change *Ac* (number of years after the change of LU/LC);

$AUDLK_{fcl,y}$: Post deforestation non-forest class area *fcl* in year *t* in the Leakage Belt after unplanned deforestation in the Project scenario;

$\Delta Ctot_{fcl,Ac}$: Gain in carbon stock in the final post deforestation non-forest class *fcl* at the age of change *Ac* (number of years after the change of LU/LC).

As the results of this formula returned ex post net carbon stock change of the leakage belt area smaller than the estimated ex ante net carbon stock change of the leakage belt area /7/, no leakage emissions were considered in the calculations. This is in accordance with the applied methodology VCS VM0015 Methodology for Avoided Unplanned Deforestation v1.1 of 03/12/2012 /4/.

- **Summary of net GHG emission reductions or removals.**

According to the applied methodology VM0015 v1.1 /6/, and the validation report /4/, the emission reductions are the baseline subtracting project emissions and leakage emissions. It is calculated as follows:

ΔREDDt = (ΔCBSLPAt – ΔCPSPAt) – (ΔCLKt + ELKt)

Where:

ΔREDDt Ex post estimated net anthropogenic greenhouse gas emission reduction attributable to the AUD project activity at year t; tCO2e

ΔCBSLPAt Sum of baseline carbon stock changes in the project area at year t; tCO2e

ΔCPSPAt Sum of ex post estimated actual carbon stock changes in the project area at year t; tCO2e

ΔCLKt Sum of ex post estimated leakage net carbon stock changes at year t; tCO2e

ELKt Sum of ex post estimated leakage emissions at year t; tCO2e

Regarding the number of Verified Carbon Units (VCUs) to be generated through the proposed

AUD project activity per year were calculated as follows:

VCUt = ΔREDDt – VCBt

VCBt = (ΔCBSLPAt – ΔCPSPAt) x RFt

Where:

VCUt Number of Verified Carbon Units that can be traded at time t; tCO2e

Note: If **VCUt** < 0 no credits (VCUs) will be awarded to the proponents of the AUD project activity.

x The values for esach of the parameters in the formula used to calculate ΔREDDt are reported in section 6 below.
It is the opinion of the VVB that the GHG emission reductions have been quantified correctly in accordance with the project description and applied methodology /4/.

4.3 Quality of Evidence to Determine GHG Emission Reductions and Removals

- **Parameters Available at Validation and Fixed Ex-ante**

Parameter (see PD for descriptions)	Source of data	Initialy Reported value	Verified value	Assessment/ Observation
Total Net ΔCBSLPA 2015 (tCO2)	Calculated from the modelled areas of deforestation and the fixed parameters …from the PD v.5.1	454,012.3	454,699	/7//8/
Total Net ΔCBSLPA 2016 (tCO2)		444,916.5	444,881	
Total Net ΔCBSLPA 2017 (tCO2)		433,713.1	423,498	
Total Net ΔCBSLLK 2015 (tCO2)		769,359.2	773,798	
Total Net ΔCBSLLK 2016 (tCO2)		883,394.8	859,759	
Total Net ΔCBSLLK 2017 (tCO2)		889,902.3	890,989	
Ctot, icl (tCO2)	PD v.5.1	413.7	413.7	/7//8/
Ctot, fcl (tCO2)	PD v.5.1	60.1	60.1	
CF(dimensionless)	Nogueira et al. (2008).	0.5	0.5	
CO2 to carbon ratio (dimensionless)	Scientific literature: 2006 IPCC Guidelines for National Greenhouse Gas Inventories Volume 4 AFOLU	44/12	44/12	

- **Parameters and Data Monitored**

Data/Parameter	**ABSLPA**$_{icl,t}$ (expost, as per monitoring plan of the PD v4.1) / **AUDPA**icl**,t** (as per section 4.2 of this report)
Data Unit	Hectare (ha)
Description	Areas of forest cover converted into non-forest cover areas within the Project area of the Jari/Pará REDD+ Project at time t
Source of data	Vector data from PRODES, derived from Satellite Images
Value data for the monitoring period	**Project year$_t$** / **ha**: Data from 2015 (deforestation from 06/09/2014 to 23/08/2015) – 453; 2016 (24/08/2015 to 09/08/2016) – 149; 2017 (10/08/2016 to – 222

	22/10/2017)
Frequency of monitoring/recording	Annual
Monitoring equipment and its accuracy	Images of remote sensing of digital processing program, geographic information system.
QA/QC procedures to be applied	The PP built a confusion matrix to evaluate the accuracy of the PRODES classification. For each class of land use it used QGIS to generate a shape with random points. A total of 198 points were generated and the classification from PRODES was checked against Google Earth images visually. The classification carried out with Google Earth was then passed on to ArcGis and with both classifications in the attribute tables they were then extracted to excel spreadsheet “Validação_prodes_1.0” /25/ and the confusion matrix built and analysed. This confusion matrix is the one shown in the MR. The accuracy calculated was of 83% so greater than the accuracy established at the PD which states it should come to a minimum accuracy of 80%.
Purpose of Data	Calculation of project emissions
How were the values in the monitoring report verified and cross-checked ?	Rina verified that the shapes constructed with satellite images of the above dates, with all deforested areas till 2017 (which contain areas deforested in previous years too, that is 2014, 2015 and 2016) can be downloaded from PRODES Digital Project: http://www.dpi.inpe.br/prodesdigital/prodes.php last accessed 13/08/2019. Rina verified that the PP used the following scenes from PRODES: 226/60, 226/61, 227/60 and 227/61. They georeferenced to WGS84 and cut the images with GIS. The values were then extracted from the attribute tables of the shape files of the newly cut PA images to a spreadsheet “Prodes_PA” /26/ and the areas of deforestation for each respective year calculated. The PP repeated the calculations from the extracted values of shapefiles to the “Prodes_PA” during site visit and the resulting values were as per the ones reported above which are the ones reported in the MR v1 (see also Analise PRODES_AP_LKB spreadsheet /28/)

Data/Parameter	**ABSLLK$_{icl,t}$** (expost, as per monitoring plan of the PD v4.1)	
Data Unit	Hectare (ha)	
Description	Areas of forest cover converted into non-forest cover areas within the leakage belt of the Jari/Pará REDD+ Project	
Source of data	Vector data from PRODES, derived from Satellite Images	
Value data for the monitoring period	**Project year$_t$**	**ha**
	Data from 2015 (deforestation from 06/09/2014 to	836

	23/08/2015)	
	2016 (24/08/2015 to 09/08/2016)	208
	2017 (10/08/2016 to 22/10/2017)	156
Frequency of monitoring/recording	Annual	
Monitoring equipment and its accuracy	Images of remote sensing of digital processing program, geographic information system.	
QA/QC procedures to be applied	The PP built a confusion matrix to evalueate the accuracy of the PRODES classification. For each class it used QGIS to generate a shape with random points. A total of 198 points were generated and the classification from PRODES was checked against Google Earth images visually. The classification carried out with Google Earth was then passed on to ArcGis and with both classifications in the attribute tables they were then extracted to excel spreadsheet “Validação_prodes_1.0” /25/and the confusion matrix built and analysed. This confusion matrix is the one shown in the MR. The accuracy calculated was of 83% so greater than the accuracy established at the PD which states it should come to a minimum accuracy of 80%.		
Purpose of Data	Calculation of leakage emissions	
How were the values in the monitoring report verified and cross-checked ?	Rina verified that the shapes with constructed with satellite images of the above dates, with all deforested areas till 2017 (which contain areas deforested in previous years too, that is 2014, 2015 and 2016) can be downloaded from PRODES Digital Project: http://www.dpi.inpe.br/prodesdigital/prodes.php last accessed 13/08/2019. Rina verified that the PP used the following scenes from PRODES: 226/60, 226/61, 227/60 and 227/61. They georeferenced to WGS84 and cut the images with GIS. The values were then extracted from the attribute tables of the shape files of the newly cut Leakage Belt Area images to a spreadsheet “Prodes_LKB” /27/ and the areas of deforestation for each respective year calculated. The PP repeated the calculations from the extracted values of shapefiles to the “Prodes_LKB” during site visit and the resulting values were as per the ones reported above which are the ones reported in the MR v1 (see also Analise PRODES_AP_LKB spreadsheet /28/)		

Data/Parameter	**APDPA$_{icl,t}$**
Data Unit	Hectare (ha)
Description	Survey and mapping of areas of forest cover converted into non-forest cover areas due to the construction of forest management infrastructures (planned deforestation).
Source of data	Technical maps for the POAs

Value data for the monitoring period		Project Year *t*	Areas of planned deforestation x Carbon stock change (decrease) in the project area ID_{cl} = $APDPA_{icl,t}$ ha
		2015	73
		2016	0
		2017	0
Frequency of monitoring/recording	During the management year of each UPA		
Monitoring equipment and its accuracy	Field card, post-exploratory reports and geographic information system		
QA/QC procedures to be applied	The mapping of planned deforestation areas for the implementation of the Forest Management infrastructures was carried out through the field planning carried out by the Jari team.		
Purpose of Data	Calculation of project emissions		
How were the values in the monitoring report verified and cross-checked ?	Maps of main and secondary road shape files /29//30/ for the UPA 9 POA (annual operational plan). These were crosschecked with main and secondary road maps protocolled at the environmental regulators /56/. Patios from internal control spreadsheet “Patios florestais por UPA.xlsx” /31/.		

Data/Parameter	**∆CabBSLLKt**
Data Unit	tCO_2-e
Description	Changes in total carbon stock in the leakage belt area
Source of data	Calculated
Value data for the monitoring period	0
Frequency of monitoring/recording	To be determined depending on the activity
Monitoring equipment and its accuracy	To be determined depending on the activity
QA/QC procedures to be applied	To be determined depending on the activity
Purpose of Data	Calculation of leakage
How were the values in the monitoring report verified and cross-checked ?	Area of deforestation in the leakage belt was checked against Prodes_LKB_excel file /27/. The calculation of leakage emissions was then compared to the ex-ante calculation in the PD v5.1 /7/. Estimated total, ex ante net carbon stock change of the leakage belt area is greater than calculated total ex post net carbon stock change of the leakage belt area and thus leakage can be considered zero. This is in accordance with applied methodology /4/. For more details see CAR7 in appendix 1 of this report.

Data/Parameter	**Frequency of surveillance and patrol operations**
Data Unit	Number of operations per year
Description	Record of the number of surveillance operations carried out in the design area and leakage belt during the monitoring period
Source of data	Patrimonial Surveillance Reports
Value data for the monitoring period	Set. – Dez. 2014: 25 river operations and 73 land operations; Jan. – Dez. 2015: 46 river operations and 196 land operations; Jan. – Dez. 2016: 14 river operations and 155 land operations; Jan. – Out. 2017: 22 river operations and 227 land operations.
Frequency of monitoring/recording	Monthly
Monitoring equipment and its accuracy	Property surveillance team field sheets
QA/QC procedures to be applied	Until the finalization of this monitoring report QA/QC procedures were not applied
Purpose of Data	Evaluation of the efficiency of surveillance operations
How were the values in the monitoring report verified and cross-checked ?	Patrimonial Surveillance Activity Control 2014, 2015, 2016 and 2017 /57/.

Monitoring of forest cover by high-resolution satellite imagery are to be monitored from the validation of the Project onwards as per monitoring plan of the PD /7/.

The VVB considers that evidence used to determine GHG emissions reduction are sufficient and appropriate.

4.4 Non-Permanence Risk Analysis

Since the validation and the verification visit were carried out together, all evidences used for the assessment of the Non-Permanence Risk Analysis in *the* Jari Para - VCS-Non-Permanence-Risk-Report_4.0 discussed in the Validation Report /8/ are the same as for this first monitoring period. There is therefore no need to repeat the information but refer the reader to the validation report as/for evidence to the Non-Permanence Risk Analysis of these first monitoring period.

The validation team confirms that the buffer is of 11% of the total ERs.

5 SAFEGUARDS

5.1 No Net Harm

Potential negative environmental and socio-economic impacts have been identified by the project proponent in the MR version 1 and the steps taken to mitigate such impacts too. As stated in the MR “In order to mitigate these risks, some measures have been established such as the implementation of participatory stakeholder strategies in the design of activities and decision-making, creating a more appropriate interaction structure and building together an agenda that minimizes the overlap of activities. In addition, the involvement of the parties in decision-making was strengthened, mainly through the DRP workshops and by improving existing communication channels and, finally, improving patrimonial surveillance, making it more effective, aligning the monitoring data with existing schedules.”

The VVB opened a FAR in the validation report /8/ which must be addressed by the PP by the first verification assessment of the CCB.

5.2 Local Stakeholder Consultation

Since this first verification was carried out together with the validation there is no further comments with regards to the local stakeholder consultation to those in the validation report /8/.

6 VERIFICATION CONCLUSION

RINA Service S.p.A (RINA) has performed verification of the emission reductions reported for the project activity “REDD+ Jari/Pará Project” in Brazil, for the VCS monitoring period from 08/07/2014 to 22/10/2017, with regards to the relevant requirements of VCS rules.

It is the responsibility of RINA to express an independent verification opinion about the project’s conformity with the VCS requirements and procedures and on the reported greenhouse gas emission reductions from the project.

Based on documented evidence and corroborated by an on-site assessment RINA can confirm that:

- The project has been implemented and operated as per the registered VCS PD;
- The monitoring plan in the registered VCS-PD is as per the applied baseline and monitoring methodology.
- The monitoring report and other supporting documents provided are complete and verifiable and in accordance with the applicable VCS requirements.

It is RINA’s opinion that the GHG emissions reduction stated in the VCS monitoring report version V5 of 24/11/2019 for the “REDD+ Jari/Pará Project” in Brazil for the period 08/07/2014 to 22/10/2017 are fairly stated. The GHG emission reductions were calculated correctly on the basis of the baseline and monitoring methodology VCS VM0015 Methodology for Avoided Unplanned Deforestation v1.1 of 03/12/2012 /4/.

Hence, RINA is able to certify that the total emission reductions from the project during the monitoring period 08/07/2014 to 22/10/2017 amount to 1,012,082 tCO2e and that tradable VCUs are 900,753tCO2e.

Verified GHG emission reductions and removals in the above verification period:

Year	Baseline emissions or removals (tCO_2e)	Project emissions or removals (tCO_2e)	Leakage emissions (tCO_2e)	Net GHG emission reductions or removals (tCO_2e)
July 8, 2014 - July 7, 2015	454,699	183,156	0	271,543
July 8, 2015 - July 7, 2016	444,881	51,463	0	393,418
July 8, 2016 - October 22, 2017	423,498	76,378	0	347,120
Total	1,323,079	310,997	0	1,012,082

APPENDIX 1: FINDINGS

Corrective action and/ or clarification requests	Response by project participants	Verification Conclusion
CAR 1 The VCS-Monitoring-Report-Template-v3.4 /9/ requires section 1.7 of the Monitoring Report to "Indicate the project location and geographic boundaries (if applicable) including geodetic coordinates." Include in this section a more precise location of the PA as well as RR, Leakage Belt and Leakage Management Area (this might be a map showing coordinates as the one in figure 14 v.5.1 of the PD).	To make the description of the project location more accurate in section 1.7, the paragraph referring to the location of the Project Area in MR (2) had its final part changed to: *"The Project Area (496,988 hectares) is located within the property Gleba Jari I (Project Zone), which totaling an area of 909,461 hectares (Receipt of registration of rural property in the CAR – "Recibo de inscrição do imóvel rural no CAR" in portuguese, 2016)."*. And in addition, Figure 1 (1) was complemented by the addition of RR, PA, Leakege Belt, Leakege Management Area featuring a square grid with coordinates covering its boundaries. Evidence files contemplated by CAR: (1) LocationJariParáProject.png (2) REDD Jari Para_VCS-Monitoring-Report_2.0	A map with coordinates was added to the monitoring report v3 /10/. The VVB checked the coordinates of this map to the ones already validated in the PD v5.1 /7/ and confirms project boundaries are as per validation. Validation and initial verification were carried out simutaineously. CAR1 is closed.
CAR 2 the Monitoring Report states that the monitoring period is from 8th of July 2014 to 7th of July 2017. However PRODES' images to calculate unplanned deforestation are from september 2014 to october 2017.	The data generated by PRODES/INPE is the main basis used for the preparation of the Project baseline scenario, as it is used for the preparation of Monitoring Reports. The PRODES Project has been monitoring deforestation in the Legal Amazon through satellite imagery since 1988, and annual deforestation results in the region are considered	The VVB checked that the end date of the monitoring period was corrected to 22nd of October 2017 in the MR v3 /10/, so that the information aligns with the PRODES 2017 data file PRODES_AP_data /33/ where the last dates of the images area shown.

Corrective action and/ or clarification requests	Response by project participants	Verification Conclusion
	official data, being the most reliable and accurate for the Brazilian Amazon (1). Due to the complexity and scale of the Amazon region, as well as the high cloud coverage in certain periods and locations, it is necessary to use images from different dates to completely cover the monitored area. This process aims to get the best view of the terrain and reduce the incidence of misclassification. Because of this, the dates of the images used for monitoring and consequently the period of coverage may vary annually. Thus, the PRODES coverage periods are formed as follows: the image collection dates correspond to the end of the analysis period in question, where the accumulated deforestation between the observation date of the monitored year and the observation date of the year before is mapped. from the previous year. For example, for the Project Area, PRODES 2014 collected images in September 2014, ie based on this image were mapped the deforestation that occurred since the last collection, in September 2013 (PRODES 2013), until September 2014 (PRODES 2014). The Table below shows how PRODES coverage periods are formed in the Project Area (2) since 2013 and throughout the monitoring period (2015 - 2017).	CAR2 is closed.

Corrective action and/ or clarification requests	Response by project participants	Verification Conclusion
	PRODES Year / **Observation date** / **Cover Period** / **Reference** 2014 / 2014-09-05 / september/2013 – september/2014 / Last year of historical reference period 2015 / 2015-08-23 / september /2014 – august/ 2015 / First monitoring period 2016 / 2015-11-27 2016-08-09 / august/ 2015 – august/ 2016 2017 / 2017-07-18 2017-08-12 2017-10-22 / august/ 2016 – october/ 2017 The consolidated data from PRODES 2014	

Corrective action and/ or clarification requests	Response by project participants	Verification Conclusion
	represent the period from September 2013 to September 2014, which represents the last year of the historical reference period. For this reason, PRODES 2014 is not considered as the first monitored year of the crediting period, which is PRODES 2015, which runs from September/2014 to August/2015. Therefore, monitoring starts with PRODES 2015, which covers the period from September 2014 to August 2015. The variation between monitoring periods occurs due to the need to select images with good visibility of a certain area, and may vary between the months of the second semester each year. In the case of the Jari Pará Project, this variation may be more pronounced due to the high occurrence of clouds in the region. For this reason, it is important to reinforce that it is not possible to establish fixed monitoring periods. Therefore, regardless of the image collection date, we set the project start date (July 8, 2014) to represent the start of the monitoring period in this first Monitoring Report. The monitoring end date was changed in the MR to October 2017, so that the information aligns with the PRODES 2017 data (3). Evidence files contemplated by CAR:	

Corrective action and/ or clarification requests	Response by project participants	Verification Conclusion
	(1) http://www.obt.inpe.br/OBT/assuntos/programas/amazonia/prodes (2) PRODES_AP_data.xls (3) REDD Jari Para_VCS-Monitoring-Report_2.0	
CAR 3 The monitoring report v1 states that the 'REDD+ activities are related to the greenhouse gas emission reduction by containing unplanned deforestation, promoting social inclusion and socio economic development'. Make table 1 of the MR v1 clearer on how each of the actions listed help to contain unplanned deforestation. Activities which existed previous to project start date can not be considered project actitivities unless properly justified and evidenced. Review to reflect all implementing real actions (inplementation of management, social inclusion, socio economic development and deforestation containement actions) and place all documental evidence of the actions in one single link.	The old Table 1, current 2, has been redesigned (1), focusing on actions taken during the monitoring period (2015 - 2017). During this period not only activities to contain deforestation were carried out, but also it was development activities of the project itself, such as technical studies and diagnosis. All actions are described, with their documentation referenced and made available to the VBB (2) (3) (4) (5) (6) (7). The containment of deforestation in the monitored period is directly related to the actions taken by the Jari Group surveillance team, which has been operating in the area since 2003, but that since 2014 has acted in accordance with the principles of REDD+ certification, aimed at identifying and mitigating environmental degradation in the property, valuing the conservation of the environmental asset (8). During the monitored period, the surveillance team kept its activities independent of the PRODES data based on satellite images, since the improvement of the surveillance process by joining the remote monitoring	Table 1 of the MR v1 /10/ is now table 2 of the MR v3 /10/ and was revised to include: 1) A better explaination of how the survailance carried out from the begining of the project until the end of the first monitoring period differs from the survailance carried out before Jarí Pará REDD+ Project started. The VVB requests the PP to make a more clear statement in the MR about the surveillance activities before and after the start of the project as was explained here in the answer to this CAR and through direct communication that «survaillance before was more in the sense of protecting Jari's property and now it also includes identifying and mitigating environmenatl degradation in the property». Also explain here how the evidence sent shows that the surveillance activities are now happening more in the sense of mitigating deforestation. This was not clear to the VVB from evidence sent;

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	information with the field actions was not completed until the end of this monitoring period. The field checks based on PRODES data have actually started only after the current monitoring period and additionally, the implementation of strategic actions to apply intelligence and technology in environmental monitoring will begin after the project's capitalization aiming to increase the efficiency of combating deforestation in subsequent years.In addition, during the monitored period the Fundação Jari also played a very important role working with the communities of the state of Pará, precisely in the municipality of Almeirim and the district of Monte Dourado. This work focuses on working with smallholder communities that have degraded areas in their lands.The focus was on the empowerment of families through technical assistance, mainly aimed at reducing the risks of increased deforestation in previously open areas, thereby promoting social inclusion and supporting the region's socioeconomic development (9). Complementing these activities, the Grupo Jari also carried out, during the monitored period, the follow up of the feedback extracted from the company's communication channels, the "Fale Conosco" (Contact Us). With regard to the control and monitoring of deforestation, these channels enable actors to make complaints about deforested areas, often identifying those responsible for them,	2) With regards to the satelite monitoring, the information is not what is mentioned in the PD v5.1; 3) The table has also been revised to now state the following «*Fundação Jari carried out with the communities of the municipalities of Monte Dourado and Almeirim the project to implement Agroforestry Systems (SAFs in Portuguese). With the objective of contributing to containment of non-productive areas expansion"* As this information was recently added to the MR version 3 /10/ and the PD states that this activity would only start from 2019 on wards, the VVB verified this activity through the evidence sent by PPs, Fundação Jari's Impacts Report 2016 /49/ and Impacts Report 2017 /50/. The VVB reviewed this documentation with information regarding the activities of Fundação Jari in those years and confirms that the reports state that the Fundação was successful in helping communities of Almeirim to acquire rural credit to the SAFs in those years in the sum of R$ 739,253 in 2016 and R$ 2,105,992. Please provide more objective evidence that the Fundação Jarí participated in the

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	assisting in the work of land tenure surveillance, beside been essential for receiving complaints, suggestions or doubts about the REDD+ Project (10). Evidence files contemplated by CAR: (1) REDD Jari Para_VCS-Monitoring-Report_2.0 (2) Folder: Atas Reuniões (3) Folder: Contratos (4) Folder: Estudos Técnicos (5) Folder: Gestão Financeira (6) Folder: TDR (7) Folder: Workshops (8) Folder: Vigilancia (9) Folder: ATER_Fundação Jari (10) Folder: Comunicação_Fale Conosco	activities described in the reports. For example, it mentions the elaboration of a «use of property plan for those families and access to rural investments» and «training of families in the management of agroforestry systems» ; 4) VVB checked records of contact us channels and how follow up action till its closure is carried out. CAR3 remains opened due to 1 to 3 above. 1) The PP sent the procedure «Surveillance of the land area»/43/ dated 28/11/2018 that shows changes in surveillance compared to previous version of the same procedure /44/ and records of survailance patrols to show that this procedure was already in place since 2015 /45/. The VVB confirms that the new procedure now mentions surveillance activities to be carried out in the REDD+ framework as well as previous patrimonial surveillance activities and that patrol records evidence, with reasonable level of assurance, that the procedures are being put into place as evidenced by surveilance records /47//48/, and that this records have information on deforestation that can be used to better understande its dynamics. The VVB also checked the

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	Response Updated October 29, 2019: The old version of Table 1, current Table 2, has been redesigned (1), focusing on actions taken during the monitoring period (2015 - 2017). During this period not only activities to contain deforestation were carried out, but also it was development activities of the project itself, such as technical studies and diagnosis. All actions are described, with their documentation referenced and made available to the VBB (2) (3) (4) (5) (6) (7). **1)** The identification of deforestation in the monitored period is directly related to the actions of the Grupo Jari property security (surveillance) team, which has been operating in the area since 2003, but which has been working since the beginning of the project in accordance with the principles of REDD+ certification. The beginning of the change of position of the team's actions can be seen in the evidences (11) and (12) that refer to the first Workshop held between the proponents and the research institutions that participated in the project development, where the team was represented by Mr. Augusto Praxedes, responsible for the transfer of information to the property security area (19). At this event, the case of the Jari/Amapá REDD+ project was presented, which showed positive results from the surveillance team's work allied with the surveys conducted by Biofílica from the data provided by PRODES monitoring, and the challenge	reports on educational activities about environmental legislation and controlled fire as well as risks of forests uncontrolled fires during 2017 /46/, with the local communities initially involved in the project activities However, for the next verification, the PP is required to make procedures clearer about the feedback that the surveillance team should be giving to the technical team that works with the local communitites, about deforested areas in possesion of local communities, as well as the forestry team already in the procedure «Surveillance of the land area»/43/. A FAR was opened for the next VCS verification. Item 1 is closed. 2) The activity "*evaluation of new deforestation points and areas through satellite imagery for the generation of annual deforestation bulletins*", which in turn had the following short term deforestation mitigation outputs: "*greater understanding of deforestation dynamics to conduct a more effective patrimonial surveillance*" and "*Providing inputs for the design of field interventions*" and "*Improvement of the techniques of forest monitoring activities*" listed in table 10 of the PD/7/ has been implemented with a delay

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	to implementation of these actions on Pará's property (Slide 42 - 44 of the document (12)). Since then, certain actions have been raised in order to improve and complement the work performed by the property security team, which initially focused only on collecting GPS points from degraded areas, identifying the location of these locations on maps prepared by the geoprocessing sector and making the complaint official with the relevant environmental agencies, as described in the procedure (Page 5-6 document (20)). The new positioning of the team's actions is demonstrated in the update of the procedure regarding the patrolling conditions on Jari's lands (Revision 16 (22)) that was built over the monitoring period. When compared to the previous procedure (Revision 11 (21)) some items were created and changed as: conflict resolution (Page 2-3 (22)), the internal process flowchart (Page 3 (22)), the conditions and conduct of monitoring (Page 3-4 (22)), the definition of monitoring actions in High Conservation Value Areas (Page 5-6 (22)) and control of activities in the areas (Page 6-7 (22)). Among the implemented actions is the improved monitoring of high conservation value areas, can be verified by the examples of monitoring records available (23). In addition, the other activities performed during the monitoring period by the surveillance team are evidenced with the bulletins,	as seen from the bulletins issued in 2018 /19/. This represents a deviation from the PD which has been justified in section 2.2.2 of the Monitoring Report v 4 of 29th October 2019 /10/. The VVB checked that this action of internally reporting the location of deforestation was replaced by other activities which were not planned to start during this first monitoring period, but planned to begin after 2019. These actions refer to the theme “Technical Assistance and Rural Extension (TARE)” which involved the activities of Strengthening Family Agriculture and Sustainable Extractivism, through the implementation of the SAF projects (evidences were discussed below in item 3), and the Environmental Education Program, with the holding of workshops for the prevention of environmental degradation by communities (evidences discussed item 1 above). The VVB then agrees that the replacement of one activity for another in time, anticipating activities planned for 2019, and the evidence seen that the monitoring by satelite imagery was implemented with a delay /19/, shows that no impact on additionality would occur. That is, the extra

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	invasion spreadsheets and control of sector activities (8). Among the mitigating actions, were those that are associated with the technical assistance work carried out by the Fundação Jari wich offer environmental guidance and education to local communities (13) (14) (15). In addition, mitigation actions related to conflict management were also performed (16) (Page 2-3 (22)). The mitigation actions implemented by the Fundação Jari technicians dealt with the themes related to practice of illegal and environmentally incorrect practices such as the use of fire, deforestation for land clearing ((Page 3 - 14 (14)) (Page 3 - 9 (15)), and contamination of rivers and soils ((Page 1 - 10 (13)) (Page 15 (14)). These actions are considered one of the main means of communication with the communities pointed out by the procedure (Page 6 (19)), but not the only one since, as well as technicians of Fundação, other technicians from various areas of the Grupo Jari work with the Project Zone communities, such as Technicians of Fomentation and Surveillance (Page 3 (19)). Other work focused on mitigating deforestation and illegal actions in the area refers to the conflict management procedure (16) that conciliate the activities of various sectors of the company (Institutional Relations, Infrastructure Management (comprising the Surveillance Team (Header (22)),	costs with activities like technical assistance for agroforestry, besides the costs with sustainable timber extraction, which are not included the the alternative scenario (the forest management only with timber extraction) and which help to mitigate deforestation will carry on higher than in the alternative scenario, regardless of changes in implementation dates of such activities, as these are extra activities to forest management (the alternative scenario used in additionality analysis). The VVB also agrees that the change does not impact applicability of the methodology AM0015 /4/ since the project activity continued, throughout the delay to be «forest protection with controlled logging» and baseline scenario also continued the sabe as per PD v 5.1 /7/. Item 2 is closed. 3) The VVB checked Emater and Fundação Jarí - ATER first semester of 2015 report /52/ which states the SAFs objectives, and brings 2015 results on the Project's actions in the communities of Almeirim and Monte Dourado, more specfically Serra Grande/Recreio Community. The VVB also checked one of the self aptitude statements presented by the PP

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	Fundação Jari and Legal Area) forming a Committee with the mission of seeking a solution to any and all land, environmental and social conflicts between third parties involving the forest management units under the management of the Grupo Jari(Page 2-3 (22)) and (Page 2 (16)). An example of the performance of this Committee was a case that began in 2015 and continues to the present day, but throughout the monitoring period had several developments with regard to land tenure and deforestation detected in the areas of Grupo Jari (Page 1-2 (17)). **2)** One of the actions foreseen in the Table 10 of the PD was to conduct field checks of deforested areas detected by satellite images surveyed by Biofílica (PRODES monitoring), described as "Deforestation Monitoring via Satellite Imagery", that focuses on improving the surveillance process by adding remote monitoring information to field actions, as well generates more knowledge about the dynamics of the deforestation in the Project Zone and contributes directly to the work of technical assistance realized by Fundação Jari, strengthening it throughout the Project's execution. This activity has started after the end of the first monitoring period (18), and therefore, was not included in the Monitoring Report. So far, only a partial check of the deforestation points raised by satellite images has been verified, which can be	/53/ as evidence of the assistance that Fundação Jarí gave in the use of property plan for families of small land holders and access to rural investments. Item 3 is now closed. CAR3 is now closed.

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	verified by the evidence (24) (25). Therefore, during the period covered by this monitoring report, the actions belonging to the "Forest Monitoring Intelligence" activity axis provided in the PD, were partially performed with the activity described in Monitoring Report "Intensify and improve the efficiency of Patrimonial Surveillance". In contrast, other activities aimed at mitigating and combating deforestation and environmental degradation such as those related to the theme of "Technical Assistance and Rural Extension (ATER)" which involved the activities of Strengthening Family Agriculture and Sustainable Extractivism, through the implementation of the SAF projects (9) (26)(27)(28), and the Environmental Education Program (13)(14)(15), with the holding of workshops for the prevention of environmental degradation by communities. The realization of these activities was essential for the project to achieve results in reducing deforestation in the Project Area and Leakage Belt and would not take place in the common practice scenario as they required additional investments from the proponents. Therefore, failure to carry out a planned activity, does not affect the financial additionality as it has been replaced by other activities, which in turn required additional investments for the project to succeed in reducing unplanned deforestation. The Proponents understand that this is part of the	

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	initial process of implementing such a complex project, and in the next monitoring cycles, it is intended that these, among other activities will be fully implemented, generating greater effectiveness in combating deforestation. **3)** In addition, during the monitored period the Fundação Jari also played a very important role working with the communities of the state of Pará, in the municipality of Almeirim and the district of Monte Dourado. These activities were focused on working with smallholder families that have degraded areas in their properties. The main objective of these actions was to stimulate the recovery of these altered areas through the implantation of agroforestry systems with emphasis on the cultivation of subsistence crops and fruit species, such as açaí in consortium with cocoa, cupuaçu, orange tree and other traditional production systems, thus contributing to the strengthening of policies of combat rural poverty and to combat deforestation and illegal exploitation of natural resources (Page 1 (26)). The focus was on the empowerment of families through technical assistance, mainly aimed at mitigating and reducing the risks of increased deforestation in previously open areas, thereby promoting social inclusion and supporting the region's socioeconomic development (9). The report about the *"Prestação de Serviços de*	

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	Assistência Técnica e Extensão Rural – ATER" (26) focused on the project *"Sistema Agroflorestal – EMATER/Banco da Amazônia S.A/STTR/Fundação Jari"* exemplifies how the Fundação Jari works in region since 2015, the document reports actions taken in the communities located in Almeirim and Monte Dourado as: Extractive and agricultural financing projects, enabling access to rural credit and Technical Assistance and Rural Extension – TARE (Communities Recreio and Serra Grande) (Pages 4 and 5 (26)); Seedling distribution focusing on diversification of fruit species (Communities Arumanduba, Bananal, Bandeira, Bituba, Buritizal, Braço, Cafezal, Estrada Nova, Goela (Goela da Morte), Itatininga, Loral, Nova Vida, Panama, Pedral, Pimental, Recreio, Repartimento, São Miguel, Serra Grande and Vila Nova) (Pages 10-12, 14-16 (26)); and Training for seedling production and nursery implantation (Communities Braço, Pimental, Nova Arumanduba (Arumanduba), Cafezal, São José, Santo Antônio, Padaria, Repartimento, São Miguel and Nova Conquista) (Pages 12 and 13 (26)). In addition, the presentation *"Avaliação de resultados no I semestre de 2016 – Programa Negócios Agroflorestais"* (27) presents datas and images of the results of these actions in 2016, exemplifying these activities from communities Água Azul, Ariramba, Arumanduba, Bananal, Bandeira, Bituba, Braço, Buritizal, Cafezal, Estrada Nova, Freguesia, Goela (Goela da Morte),	

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	Itaninga, Nova Conquista, Nova Vida, Padaria, Panama, Pedral, Pimental, Praia Verde, Ramal Fé em Deus, Ramal França Rocha, Recreio, Repartimento, Santo Antônio, São José, São Miguel, São Militão, Saracura, Serra Grande, Sombra da Mata, Tira-Couro and Vila Nova (Pages 4-5, 7-10, 20, 36-37 (27)). **4)** Complementing these activities, the Grupo Jari also carried out, during the monitored period, the follow up of the feedback extracted from the company's communication channels, the "Fale Conosco" (Contact Us). With regard to the control and monitoring of deforestation, these channels enable actors to make complaints about deforested areas, often identifying those responsible for them, assisting in the work of land tenure surveillance, beside been essential for receiving complaints, suggestions or doubts about the REDD+ Project (10). Updated evidence files contemplated by CAR: (1) REDD Jari Para_VCS-Monitoring-Report_2.0 (2) Folder: Atas Reuniões (3) Folder: Contratos	

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	(4) Folder: Estudos Técnicos (5) Folder: Gestão Financeira (6) Folder: TDR (7) Folder: Workshops (8) Folder: Vigilancia (9) Folder: ATER_Fundação Jari (10) Folder: Comunicação_Fale Conosco (11) ATA I WORKSHOP – PROJETO REDD+ PARA.pdf (12) JariPara_Workshop.pdf (13) RELATÓRIO DO I e II SEMESTRE DE 2016 – ASA.pdf (14) Relatório_ASA_II TRI_2017.pdf (15) Relatório_ASA_IV TRI_2017.pdf (16) SIG PI - Gestão de Conflitos 0004 ok ECM.pdf (17) mediacao de conflitos.pdf (18) Boletim de Monitoramento Jari Para -	

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	2015_2016_2017_2.1.pdf (19) PI - Comunicacao com Partes Interessadas rev 017 ok ecm.pdf (20) PA - Conservação da Flora e Fauna Rev 08 ok ECM.pdf (21) IT-FiscalizaçãoFundiária_2013.pdf (22) SIG PI -FiscalizaçãoFundiária_2018.pdf (23) Folder: Fiscalização AAVC (24) Checagem pontos Biofílica - Jari pará.pdf (25) Mapa Auxiliar - Projeto REDD Jari PA 2015 2016 2017.pdf (26) Relatório I SEMESTRE SAF 2015_Mudas.pdf (27) APRESENTAÇÃO SAF I SEMESTRE 2016 PEDRO.pdf (28) Folder: ProjetosPRONAF	
CAR 4 Baseline carbon stock changes in PA and Leakage Belt Area must be corrected to reflect the values of the validated last version of the ER spreadsheet calculations and PD.	The values were corrected in the MR (1) and ex-post calculation spreadsheet (2), and are now in accordance with the validated PD and in the RE spreadsheet.	Value for Baseline carbon stock changes in PA and Leakage Belt areas now corrected according to ERs spreadsheet version 5.2 and PD v 5.1. CAR4 is closed.

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	Evidence files contemplated by CAR: (1) REDD Jari Para_VCS-Monitoring-Report_2.0 (2) VCS MonitoringReport JariPara_2015_17_v4.xlsx	
CAR 5 correct the timing of the post deforestation regeneration in the calculations according to Errata-and-Clarifications-VM0015-v1.1-03-NOV-2017 /24/.	As well as for the Validation process, the PP revised the recently published VCS (2017) errata with updates to the VM0015 Methodology regarding post-deforestation class inventory increases. The appropriate changes were made in the Monitoring Report (1). Evidence can also be verified in ex-post calculation spreadsheets (2). Evidence files contemplated by CAR: (1) REDD Jari Para_VCS-Monitoring-Report_2.0 (2) VCS MonitoringReport JariPara_2015_17_v4.xlsx	ER Calculations_VCS MonitoringReport JariPara_2015_17_v4 /11/ and MR v3 /10/ checked by the VVB and post deforestation now calculated as required by Errata-and-Clarifications-VM0015-v1.1-03-NOV-2017 /24/. CAR5 is now closed.
CAR 6 Formulae used to calculate planned deforestation and logging activities as well as the justification for choices according to methodology are not in the MR. If harvested wood was	<u>Calculation of planned activities:</u> The item “3.3.3 Monitoring Plan for Climate Impacts” do MR, mostly precisely the sub-item “.1 Monitoring current changes in carbon stock and GHG emissions in the Project Area”, was	The VVB checked the latest Forest Management Plan /51/ and confirms that with regards to logged wood the types are intended to building which are normally high density and long lived. This is better

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considered permanent provide evidence that they were destined to long term products (i.e. > than 100 years as per applied methodology)	reformulated to clarify the understanding of the application of calculation formulas for planned deforestation, their registration and their justification for use according to the methodology. Briefly, the same formulas used for monitoring carbon stocks in the Project Area are applied to planned deforestation areas, in the case of the 2015-2017 MR these activities refer to forest management. <u>Long-lived wood products:</u> As outlined in the most up-to-date Forest Management Plan 2016 (1) (page 201), logging was mainly directed to the production of raw sawn materials and surfaced two sides (S2S) and surfaced four sides (S4S). The materials intended for export are aimed at the floor, door, window, frame, facade cladding, garden, civil construction and hydraulic and sleepers' industries. While the materials aimed at the domestic market were for the production of boards, planks, beams, stakes, rafters, rulers and other cuts. In addition, VM0015 assumes that long-lived wood products never decompose (ie never results in an emission), so it is conservative to disregard these products in emissions calculations (footnote 43). This was also proven by calculating the projection of	justified now in section 4.2.2 of the MR v3 /10/. The MR also now shows formula used to calculate planned deforestation. CAR6 is closed.

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	emissions of these products performed during project validation, in the table "Significance_assessment" of the Worksheet (2), delivered to VVB during validation, where the carbon stock stored in these products was very higher than estimated for the baseline. Based on these facts, PP conservatively understand that it is not necessary to consider this Carbon Pool since the project does not cover monitoring activities of these parameters and its emission is practically zero as mentioned by VM00015. Evidence files contemplated by CAR: (1) FRMBrasil_PMFS_2015_Vfinal_dEZEMBRO 2016.pdf (2) VM0015_planilha de calculo_JariPara_5.2.xlsx	
CAR7 Calculation of leakage in the leakage belt area is not explained in the MR. Justification of why leakage was not discounted from ERs making reference to the appropriate applied methodology requirement needs to be included.	The item "1.2 Monitoring of Leakage" which is inserted in the section "3.3.3. The Monitoring Plan for Climate Impacts" was adjusted to clarify the method used to calculate leakage, its parameters and procedures, according to the methodology used. In the item "4.3.2 Total ex post estimated leakage" the calculation method is explained again and it is	The VVB checked v3 of the MR /10/ and it now states formula used to calculate leakage and the justification of the fact that no leakage emissions were considered as the calculations showed leakage to be smaller than the estimated in the baseline. This is in accordance with the applied methodology VCS VM0015 Methodology for Avoided Unplanned Deforestation v1.1 of

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	shown why the leakage did not occur, the results are presented in Table 26 of the MR. Leakage is calculated by the difference between ex post and ex ante evaluation, and as shown in both MR (1) and ex post calculation worksheet (2), the value of the carbon stock change within the Monitoring Period from 2015 to 2017 is less than zero (<0), so the ex post leakage has been set as zero in these years as recommended by section 1.2 - Leak Monitoring in footnote 48 of VCS VM0015. Evidence files contemplated by CAR: (1) REDD Jari Para_VCS-Monitoring-Report_2.0 (2) VCS MonitoringReport JariPara_2015_17_v4.xlsx	03/12/2012 /4/. CAR7 is closed.
CAR8 Correct monitoring parameters as per validated PD	All monitoring parameters were corrected in MR (1) according to the parameters established in the validated PD, since only those parameters related to Climate were considered in this monitoring. The evidences regarding the dates of satellite images (2) (3) used in the monitoring parameters are available to the VVB.	VVB checked MR v3 /10/ and confirms Climate parameters are now in accordance with sections 3.1 and 3.2 of PD v5.2 /7/. CAR8 is closed.

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	Evidence files contemplated by CAR: (1) REDD Jari Para_VCS-Monitoring-Report_2.0 (2) PRODES_AP_data.xls (3) PRODES_LKB_data.xls	
CL1 If the unplanned deforestation in the year named 2015 goes from september 2014 to august 2015 the planned deforestation in UPA 8, in the second semester of 2014, if any, should be included in calculations. Please inform and provide evidence whether UPA 8 was logged during the second semester of 2014 and if so provide the AUTEF for that period too since the AUTEF provided for UPA 8 only covers first semester of 2014. Furthermore, the following AUTEFS (Authorisation for the Exploration of Sustainable Forest Management Plan) for UPA9 were verified: AUTEF N°27936/2014 issued on 14/10/2014 and valid until 14/10/2015 and AUTEF N°272981/2017 issued on 21/02/2017 and valid till 21/02/2018. Please provide AUTEF for the period in	The Forest Exploration Authorization (AUTEF) is issued by the Pará State Secretariat of the Environment (SEMA/PA), authorizing the beginning of the exploration of a UPA, where the maximum volume per species allowed for exploitation is specified, having a validity of 12 months. According to article 16 of Normative Instruction No. 04 (1), AUTEF may be extended for another 12 consecutive months in compliance with the appropriate guidelines. In addition, it should be noted that logging activities in the Amazon region occur during the periods of the year with the lowest rainfall, so the activity does not last a full year, and it is often necessary to extend. According to the most up-to-date Forest Management Plan (2) for the Gleba Jari I areas issued in 2016, during the 10 years of PMFS-JARI FOREST projects, the areas of 8 UPAs were explored, namely: UPA- 01, UPA-02, UPA-03, UPA-04, UPA-05, UPA-06, UPA-07 and partially UPA-08 and UPA-09. In this case, UPAs 08 and 09 were the last to be explored on the property, within the	The VVB checked that the AUTEF for UPA 08 was extended from 27/06/2014 till 27/06/2015 /37//38/. The VVB also checked the post-exploratory reports of annual producing unities (from the abreviation in Portuguese UPAs) 06 and 07 /34//35/, and confirms that it has been recorded that infrastructure for annual planning unit 08 was carried out while planned logging for UPAs 6 and 7 were being carried out between september 2012 and dezember 2013. It also confirmed from the environmental regulator (SEMAS) document Processing History of the UPA 08 /36/ that post exploratory reports were presented to the environmental regulators in July 2015. So the VVB confirms with reasonable level of assurance that most planned deforestation of infrastructure for UPA 08 was carried out before the monitoring period. With regards to UPA 09 the VVB checked the Processing History of Annual Production Unit 09

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between these two AUTEFs of UPA 9.	analyzed period, this is proven because the others already had their post-exploratory reports ready (3) (4) (5) (6) (7). In the case of UPA-08, the first AUTEF issued was valid until 06/27/2014 (8), being extended until 06/27/2015 (9), according to the history of processing of the AUTEF of UPA-08 taken from SEMA/PA website (10) its management was finalized in July 2015, when post-exploratory reports were submitted and analyzed by SEMA/PA (page 45 of document (10)). However, the post-exploratory reports of POAs 06 and 07 show in the activity schedules that between 2012 and 2013 the infrastructure for UPA-08 had already been opened in conjunction with the exploration activities of UPAs 06 and 07 (6) (7). Therefore, based on this evidence, it was decided not to incorporate in the calculations for 2015 the planned deforestation related to the infrastructure opening of UPA-08. Taking into account the working methodology applied, and since we did not have access to the UPA-08 post-exploratory report, we consider that the planned deforestation to open the UPA 09 infrastructures was fully carried out in 2015 (11). Since the expiration of the first UPA-09 AUTEF on 10/14/2015 (12), documents related to UPA-09 have been processed within SEMA/PA as shown in its processing history (13) taken from the SEMA website. The document states that only in July 2016	/39/ issued by the environmental regulators and confirms that Jarí Florestal requested extention of the AUTEF in 2016 /39/ and that a favourable sentence was issued by the courts regarding the area being managed in that same year, supporting the argumentation of the PP that between 14/10/2015 and 21/02/2017 no activity was carried out with regards to the SFMP. CL1 is closed.

Corrective action and/ or clarification requests	Response by project participants	Verification Conclusion
	did the company Jari Florestal express an interest in extending AUTEF (page 25 of document (13)), which process was completed in February 2017 (14) (page 39 of document (13)). This period in which there was no management corresponds to the period in which the Jari Group underwent investigations (later cleared as already shown) and had to temporarily paralyze its native forest management activities, because of this there are no documents regarding the activity of this period. Evidence files contemplated by CAR: (1)https://www.semas.pa.gov.br/2011/05/13/10986/ (2) FRMBrasil_PMFS_2015_Vfinal_dEZEMBRO 2016.pdf (3) Relatório de Atividades POA 03-2007_final.pdf (4) Relatório de Atividades POA 04 Final.pdf (5) Relatório de atividades POA 05 (Final).pdf (6) Relatório Final de Atividades POA 06.pdf (7) Relatório de atividades POA 07_FINAL.pdf	

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Verification Conclusion	
Response by project participants	(8) AUTEF Nº 20140-2013_POA 08.pdf (9) AUTEF Nº 20140-2013_POA 08-Prorrogação.pdf (10) HistoricoTramitação_AUTEF08_2014_2015.pdf (11) VCS MonitoringReport JariPara_2015_17_v4.xlsx (12) AUTEF_POA09.pdf (13) HistoricoTramitação_AUTEF09_2014_2018.pdf (14) AUTEF Nº 272981 POA09_VAL 21.02.2018 – prorrogação.pdf
Corrective action and/ or clarification requests	FAR 1 the PP is required to make procedure "Surveillance of the land area" /43/ clearer about the feedback that the surveillance team should be giving to the technical team working with the local communitites about deforested areas in possesion of identified local communities, as well as the forestry team which is already in such procedure. This FAR such be checked at the next VCS verification.

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RINA SERVICES
classification, certification, inspection & testing

CERTIFICATO DI QUALIFICA PER GLI SCHEMI VOLONTARI*
*QUALIFICATION CERTIFICATE FOR VOLUNTARY SCHEMES**

Si attesta che il sig./sig.ra: / *We declare that Mr/Mrs/Ms:* **Rekha Menon**

è qualificato come: / *is qualified as:* **TEC, VAL, VER, TL, ITRP**

per le seguenti aree tecniche: / *for the following technical areas:*

AREE TECNICHE *TECHNICAL AREAS*	DESCRIZIONE DELL'AREA TECNICA *TECHNICAL AREA DESCRIPTION*	SCOPO SETTORIALE *SECTORAL SCOPE*
1.2	Renewables	1
2.1	Electricity distribution	2
13.1	Solid waste and wastewater	13
13.2	Manure	13
14.1	Afforestation and reforestation	14

REVISIONE *REVISION*	DATA *DATE*	MOTIVAZIONI PER LA REVISIONE *REASON FOR THE REVISION*
0	19/07/2016	First issue with new template (this certificate is linked to CDM qualification)

Responsabile di schema
Scheme Leader
Rita Valoroso

*SCHEMI VOLONTARI/ VOLUNTARY SCHEMES: ACR American Carbon Registry, CCB The Climate, Community & Biodiversity Alliance, GS Gold Standard, JI Joint Implementation, SCS Social Carbon Standard, VCS Verified Carbon Standard.

TEC: Technical expert; VAL: Validator; VER: Verifier; TL: Team leader; FIN EXP: Financial Expert; ITRP: Independent technical reviewer

RINA Services S.p.A. è accreditato/riconosciuto da
RINA Services S.p.A. is accredited /recognized by

UNFCCC	quale Entità Operativa Designata (DOE), per condurre la Validazione e la Verifica di Progetti CDM *as Designated Operational Entity (DOE), to carry out Validation and Verification of CDM Projects*
VCSA	per condurre la Validazione e la Verifica di Progetti VCS *to carry out Validation and Verification of VCS Projects*
GS Foundation	per condurre la Validazione e la Verifica di Progetti GS *to carry out Validation and Verification of GS Projects*
Ecologica Institute	per condurre la Validazione e la Verifica di rapporti SCS *to carry out Validation and Verification of SCS Reports*
American Carbon Registry ACR	per condurre la Validazione e la Verifica di Progetti ACR *to carry out Validation and Verification of ACR projects*
The Climate, Community & Biodiversity Alliance CCB	per condurre la Validazione e la Verifica di Progetti co-benefit CCB *to carry out Validation and Verification of co-benefit CCB projects*

GHG_QUAL_CERT_EN_07_16 Voluntary(Certificate) Page 1 of 1

Anexo VI – Relatórios de validação e verificação – Projeto Bandeirantes Landfill Gas to Energy

RINA SERVICES
classification, certification, inspection & testing

CERTIFICATO DI QUALIFICA PER GLI SCHEMI VOLONTARI*
QUALIFICATION CERTIFICATE FOR VOLUNTARY SCHEMES*

Si attesta che il sig./sig.ra: **Talita Carvalho Beck**
We declare that Mr/Mrs/Ms:

è qualificato come: **TEC, VAL, VER, TL**
is qualified as: **LOCAL EXPERT**

per le seguenti aree tecniche:
for the following technical areas:

AREE TECNICHE *TECHNICAL AREAS*	**DESCRIZIONE DELL'AREA TECNICA** *TECHNICAL AREA DESCRIPTION*	**SCOPO SETTORIALE** *SECTORAL SCOPE*
1.1	Thermal energy generation	1
1.2	Renewables	1
13.1	Solid waste and wastewater	13
14.1	Forestry	14

REVISIONE *REVISION*	**DATA** *DATE*	**MOTIVAZIONI PER LA REVISIONE** *REASON FOR THE REVISION*
0	19/07/2016	First issue with new template (this certificate is linked to CDM qualification)
1	14/06/2017	Update qualification in TA 14.1 and Local expert

Responsabile di schema
Scheme Leader
Laura Severino

*SCHEMI VOLONTARI/ VOLUNTARY SCHEMES: ACR American Carbon Registry, CCB The Climate, Community & Biodiversity Alliance, GS Gold Standard, JI Joint Implementation, SCS Social Carbon Standard, VCS Verified Carbon Standard.

TEC: Technical expert; VAL: Validator; VER: Verifier; TL: Team leader; FIN EXP: Financial Expert; ITRP: Independent technical reviewer

RINA Services S.p.A. è accreditato/riconosciuto da
RINA Services S.p.A. is accredited /recognized by

UNFCCC	quale Entità Operativa Designata (DOE), per condurre la Validazione e la Verifica di Progetti CDM *as Designated Operational Entity (DOE), to carry out Validation and Verification of CDM Projects*
VCSA	per condurre la Validazione e la Verifica di Progetti VCS *to carry out Validation and Verification of VCS Projects*
GS Foundation	per condurre la Validazione e la Verifica di Progetti GS *to carry out Validation and Verification of GS Projects*
Ecologica Institute	per condurre la Validazione e la Verifica di rapporti SCS *to carry out Validation and Verification of SCS Reports*
American Carbon Registry ACR	per condurre la Validazione e la Verifica di Progetti ACR *to carry out Validation and Verification of ACR projects*
The Climate, Community & Biodiversity Alliance CCB	per condurre la Validazione e la Verifica di Progetti co-benefit CCB *to carry out Validation and Verification of co-benefit CCB projects*

GHG_QUAL_CERT_EN_07_16 Voluntary(Certificate) Page 1 of 1

VCS VERIFICATION DEED OF REPRESENTATION

BY

EARTHOOD SERVICES PRIVATE LIMITED

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THIS DEED OF REPRESENTATION is made on 07/01/2020

BY

Earthood Services Private Limited, 424A, Tower B4, Spaze I-Tech Park, Sector 49, Sohna Road, Gurgaon-122018, India (as **VVB**)

THIS DEED WITNESSES as follows:

1. **INTERPRETATION**

1.1 In this Deed:

"Accountholder" means any person holding a VCU account with a VCS Registry;

"**AFOLU**" means agriculture, forestry and other land use;

"**GHG**" means greenhouse gas;

"**GHG Program**" means a formal or organized program, scheme or arrangement for the recognition of activities leading to Reductions, or the crediting or issuance of instruments representing, or acknowledging, Reductions;

"Project" means "Ticket Log Fleet Fuel Substitution";

"Project Crediting Period" means the time period for which GHG emission reductions or removals generated by the Project are eligible for issuance as VCUs (the rules with respect to the length of such time period and the renewal of the project crediting period are set out in the *VCS Standard*);

"**Project Ownership**" means the legal right to control and operate the project activities. Distinct from proof of right;

"**Project Proponent**" means an individual or organization that has overall control and responsibility for the Project, or an individual or organization that together with others, each of which is also a Project Proponent, has overall control or responsibility for the Project. The entity(s) that can demonstrate Project Ownership in respect of the Project;

"Reduction" means a reduction or removal of one tonne of CO_2e caused by the activities of a Project during the Project Crediting Period;

"VCSA" means the Verified Carbon Standard Association;

"Validation/Verification Body" or "**VVB**" means an organization approved by the VCSA to act as a validation/verification body in respect of providing validation and/or verification services in accordance with the VCS Rules;

"VCS Program" means the GHG Program operated by the VCSA which establishes the rules and requirements that operationalize the VCS to enable the validation of GHG projects and the verification of GHG emission reductions and removals;

"**VCS Project Database**" means the central project database that records all projects registered and VCUs issued under the VCS, and provides public access to all project and VCU information, including retirement and tracking of the AFOLU pooled buffer account;

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"VCS Registry" means a registry operating within the VCS Registry System and holding a current, valid agreement with the VCSA to provide registry services on behalf of the VCSA. VCS Registries interact with the VCS Project Database to issue VCUs, and hold, transfer (to and from other VCS registries), retire, suspend, cancel and provide custodial services for VCUs on behalf of its Accountholders;

"**VCS Registry System**" means the system established by the VCS Program, comprised of the VCS Project Database and the VCS Registries, to provide project proponents with the ability to register projects, and issue, transfer, hold and retire VCUs;

"VCS Rules" means the rules and requirements set out in the *VCS Program Guide*, the *VCS Standard* and the other VCS Program documents, as such rules and requirements may be updated from time to time;

"Verification Report" means the written report of verification covering the Reductions generated by the Project from 01-July-2018 to 30-June-2019 and prepared by the VVB in accordance with the VCS Rules; and

"**Verified Carbon Unit**" **(VCU)** means a unit issued by, and held in a VCS Registry representing the right of an Accountholder in whose account the unit is recorded, to claim the achievement of a Reduction that has been verified by a validation/verification body in accordance with the VCS Rules. Recordation of a VCU in the account of the Accountholder at a VCS Registry is *prima facie* evidence of that Accountholder's entitlement to that VCU.

1.2 Documents referred to in this Deed but not defined shall be the VCS documents, as updated from time to time, to which the relevant term relates.

2. **REPRESENTATIONS**

2.1 I am the Validation/Verification Body in relation to the verification of the Project.

2.2 I hereby represent and warrant that:

2.2.1 I have independently verified the Reductions generated by the Project in accordance with the VCS Rules;

2.2.2 In relation to any validation findings and conclusions provided in the Verification Report, I have independently validated the Project's compliance with the VCS Program requirements as set out in the VCS Rules; and

2.2.3 All factual information that I provide in relation to this Deed or have provided in the Verification Report is to the best of my knowledge following due inquiry true, accurate and complete in all material respects and I have not made or provided, and will not make or provide, false, fraudulent or misleading statements or information in relation to this Deed or the Verification Report.

2.3 I hereby acknowledge and agree that:

2.3.1 The following persons may rely on and enforce the terms of this Deed:

(a) the VCSA;

(b) each person who is an Accountholder holding VCUs relating to the Project at any given time;

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(c) each person on whose behalf VCUs relating to the Project were retired by an Accountholder; and

(d) each of the successors and assigns of those persons listed in clauses 1.1.1(a), 1.1.1(b) or 2.3.1(c);

2.3.2 Neither the VCSA, the VCS Registries, nor any of their respective affiliates, directors, employees, agents, licensors and/or contractors, shall be liable with respect to any claims whatsoever arising out of this Deed or erroneous information within the Verification Report submitted to the VCS Registry System for indirect, consequential, special, punitive or exemplary damages, including, without limitation, claims brought against the VCSA or the VCS Registries by Accountholders, other VCS Registries, Project Proponents, other Validation/Verification Bodies or any other third party. This paragraph shall apply regardless of any actual knowledge or foreseeability of such damages;

2.3.3 I have read, understood and will abide by the VCS Rules; and

2.3.4 The VCSA has an absolute right to amend any of the VCS Rules at any time and shall not bear any liability for loss or damage or liability of any kind sustained by the Validation/Verification Body or any other party involved in the Project in any way under the VCS Program as a consequence of such amendment.

3. **GOVERNING LAW AND JURISDICTION**

This Deed is governed by and interpreted in accordance with English law, and the English courts shall have exclusive jurisdiction to settle any dispute arising from or connected with this Deed including a dispute regarding the existence, validity or termination of this Deed or the consequences of its nullity.

4. **SOVEREIGN IMMUNITY**

To the extent that the Validation/Verification Body enjoys any right of immunity from set-off, suit, execution, attachment or other legal process with respect to its assets or its obligations under this Deed, the Validation/Verification Body waives all such rights to the fullest extent permitted by law.

5. **COUNTERPARTS**

This Deed may be executed in any number of counterparts, each of which when executed and delivered is an original and all of which together evidence the same deed.

6. **DELIVERY**

This Deed is delivered on the date written at the start of the Deed.

EXECUTED by EARTHOOD SERVICES PRIVATE LIMITED as a deed

EARTHOOD SERVICES PVT. GURGAON

Signature of director

Dr. Kaviraj Singh — Name of director

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