



2023

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1.

1.1.

E5 ! 4⁻HĐ1•eÅ%áo ü6 eO k"÷(GigaDevice)1 ÎÊ • 2005-so /:_çZ½ • ,%ü" «o -u • 2016-s 8 6 &' <vZÀ!7 £5 1?1 !ž - o 5. ý*µPó!š •-ý"Đ*W §%g1•6. ;.-2!5%go MCUb #< 0 %gXâ ²4,7GEfg... G 4ß5u& "•"l*û R k"÷ < k"÷1ä6 \,,^Æ 1,700 # #W,äo -u& ,%ü ;N•%ü ;fè%ü ;4ä6+ ;Qð%ü ;.¶%ü ;4⁻!ÿ&` JH( )%ü\*µ#< &/"9Z½6 ! 4.696f#<!• Š( < E5 ! 4<sup>-</sup>(ÊMÇ+ "î2 Mì"Đ+T [ 9 "Đ+TEf`ìX€&ùFò < k"÷_ ^ÆQ•Oü Î2' ;"î ÆD Oü=•!(D' ;MpQq^İS\$JH2©4¼o !©!šeL MPé]ª"É š-"cýG²2'4=o 9-"*ø; "x" ;*•B⁻ ""ÊG²'Eí7 \ B-!š`Î <

1.2.

[9 ý*µ`ìXÅ"î2 Mì"Đ+TEf o E5 ! 4<sup>-</sup><ðFä .R!L-"\*ø; "x" EfL&^ê/&#<`ìX€/&o -u+ u! 9 "î2 Mì"Đ+T 1 DdEf`ì , J`ì <_ ^Æ!5*™5 GmEf Fì6 ; ,6 ;d~6 ; Eí7 #<WK!SZ ! o E5 ! 4⁻Pó!š • + "î2 Mì"Đ+TEfC .ôVÇE d!/ Ef1 Dd"Đ+T ;|#À ! 4⁻ä"É 4ä-7^İS\$.R , o -u_ ^Æ# Hì =2©o + ^İS\$!D Ef=(*£; R2'4= ä"É *ø; Ef !(p#lèLPò5ÿ M <

1.1

	2023	
	2023	
	2030	100%
	2030	2021 50%
	2060	
	2060	
	2030	60%
	ngPEap-7Ö	

1.3.

R %ö=(*£; R2'4=Î ,o ;|, ; ;(€\$Q; ro o ÎB4=Î " %đ!!Ò!!¢ YU àO

2.

2.1.

x _74b2'4==• u X Pé6 Z½(<:!§ |D Ef2'4= <:Ó(•ly[; !5 ¶Z½(|D Ef_74b HFCs;
PFCs <:&" G²?l?j%gEf_74bCO₂JH <
R %ó <o!dó2¤=(*£; R2'4=
dó2¤=(*£; R2'4=Ef6d=• 9MÃMÆ ~D'1 \, oEfD0 u ŌMÃMÆ1? š-"EfD4!š ;?ìOüJHOü=•1? |D Ef=(*£;
R2'4=o .R!L^İS\$^,DK „:X€2'4==• 9%ü*µD4NPD4!š <
R %ó o! u Ōdó2¤=(*£; R2'4=
u Ōdó2¤=(*£; R2'4=6d=• •ecR %ó < ä(;D0MÃMÆ<:!§ |D ED0 u ŌMÃMÆ1?1ä6 1 2!5Ef=(*£; R
=• <6+: E×6ä1¤#l :X€X...EŌ2'4==• 9é6 "ÉHb\@|C |'^,DK „Ef#W,ä\$E! ,í4Ä ;4ä-7^İS\$D';3o ä"É E5 !
4¯4Ö |#ÆEf =7 Ò §"ÉAh<@^İ'^^ÆI , Ef=(*£; R2'4= <
782m*øMÃMÆ^,DK „|C |Ef! 6•o 6+: ^İS\$<:!§R %ó „ZÄ!* ùEf :X€=(*£; R2'4==•(• Wg1?H9o!

2.2

		/

3.

3.1.

%B E5 ! 4⁻ :X€=(*£; R2'4==• *W&'Eó2▯ED<J ;`Î<JEf6` õo 6+: E×6ä`Æ"Õ ä 4,;Ô\*ø=( \*£; R^Ú WK`Î" o!

2'4==•Ef=(*£; R2'4=Î`ÆD' IPCC2006%p*.==**¥; T= "V2 "X ,2'4=Kú4o;Ôo "ro!

=(*£; R2'4=Î = <:!\$4o2mp2'4=%B*QdyC "×5•>[!¾o oÔo×pdoØoÙpdoÚoêoã

`ÆD':c4,;ÔZ J-Ef2'4==•6 o!D4NP\, o (D4!\$) ;((@5; ; <;&" G²?l?j%g_74b CO₂ ; ¶)_74b HFCs; PFCs k^e (95#@Â;) <

%ù*™@Â?æ#<Hú!\$@Â?æEf=(*£; R2'4=ÎZ J-o 1? ~D'Ef2'4=%B*OPBC2006%p*.==**¥; T= "V2 "X %p*.Op='MàZ¢-uau ;Ef WHÎ < GWP6dPé • IPCC2007J-%Ü:"ZÅ 11!#K<

6+: R %ó ÿ ;R %ó <=(*£; RE×6äEf2'ecdç8ÚZ½*™ 9"T ý2'4==• ix • 0.5% ()2'4==•# Z ix • 3%<

3.2.

6+: R %ó =(*£; R2'4= ,o #W,ä,í4Ä ,EfQ)ly,í4Ä=(*£; R2'4=`ÆD' š-"\$E1af1Ef=( \*£; R2'4=Î ä"É# KzZ J-4,;ÔZ J-.- ù < |#À =7^Î^<:!\$Ef=( \*£; R2'4=`ÆD'%üED; Q)MÄMÆ ICAO *—4,2Ï šEf Carbon Emissions Calculatoro ICEQ /J- <4ä-7^Ï\$SD';3 ;?j^eo íxcÀo ,í4Ä"É |#À =7 Ò §<:!\$ Ef=(*£; R2'4=Î 782m**¥; T79J~ TKü o GHG Protocolo , *ø • R %ó =(*£; R2'4=Ef`Î" X€;A o "ro!

=(*£; R2'4=Î = <:!\$4o2mp2'4=%B*Q oÔo×pdoØoÙ

u ,o ?j^eo íxcÀ,í4Äo EfG²2'4=%B*O`ÆD'üDcÀiIOSBInternational Union of Railways , r • , %üíxcÀ :X€M¾\îG²2'4=%B*O /J- p

4.

4.1. 2023

E5 ! 4⁻ • 2023-sR %óŸ #<R %ó< Ef=(*£; R2'4=Î p 9 6,321,376.01"B J <;&" G².R`Î (kg CO₂e),
R %ó ^ÚWKE×6äEf=(*£; R2'4==• ,o\$E! 4ÄWK=(*£; R2'4=Î pZ 851,243.28 "B J <;&" G².R`Î o kg
CO₂eo <

4.2.

E5 ! 4⁻ • 2023-sR %ó Ÿ#<R %ó <Ef=(*£; R2'4=Î p 9 6,321,376.01"B J <;&" G².R`Î (kg CO₂e) <

4.1 2023

		IC-Park	kg CO₂e		kg CO₂e		kg CO₂e	kg CO₂e
		5,788.80L	12,735.36	2,618.83 L	5,868.21	3,779.00 L	8,313.80	26,917.37
		/	/	14,079.00m³				

(1)

4.2

2

		kg CO ₂ -e	kg CO ₂ e	
--	--	-----------------------	----------------------	--

4.3

R %ó 2'4=5. E5 ! 4⁻ -"*ø; "x" Ef ý(&`)?,g...&po R %ó 2 ö ;cý =7#< =7<:!§ |D Ef u
 Ōdó2²2'4¬, 1ë`Æ\,"ž6O4~Ef^İ^ ;#W,ä_ !ă ; |#À ~D'#<5ÿMÇ(NmJHB®Q• <

2023

851,243.28"B J <,&" G² 4

¥ • 2023 -sc†*øPé6 "ÉHP\@ \C |^,DK „Ef4ä-7^İS\$ö ä"É E5 ! 4⁻4Ö |#ÀEf =7
 Ò §"ÉAh<@^İ^1? |D Ef=(*£; R2'4= -ÿ+T ..2 Mì/&Ef4o2m45eÅ&ù• .R!L4o2m* <4s/&eO!5o 6+: 1²#I5•
 ^ÚWKE÷ rE×6äMÒèf1 <

5.

[9 gC g... GEf"l*û RZ½Z o E5 ! 4⁻<ðFä ÎN ; "x" EfL&^ê/& o -u+ 2!5=(*£; R2'4=XÅ 9
"î2 Mî"Ð+T1 DdEf`ì , J`ì <

2023 -s-¥ o E5 ! 4⁻ 4Ö \C | EfG²2'4=J C ,ä ["Ö.- ...Hî6€^Ú+T <&'2'4=77J-4,fa o 782r~~1~~÷ r
=**¥; T79J~ TKü X€;Ao ZÅ!*#<`î" ... k"÷R %ó ÿ ;R %ó <#<_ç! R %ó :X€2'4==• Ef=(*£; R2'4=o 1^a
f1 ... 2023 -s-¥Ef=(*£; R2'4=Î4o2m <

:c(o E5 ! 4⁻ ¥&' „_çHî6€2\$^Ú Q•Oü Î2' E÷ r2©4¼oS<* \C |D'OüD4; " o 2\$~-"î CED Oü
=• ~D' < # Oª7;5 eÅ1 D4\î6 eO k"÷ ,ñ • 2023-s 106 *< g^¼1 100%Ð4; " 48_ < :c# 4ðo # O&ù&B⁻
6 +Jgu H KúMÐ,ñ< g1" d^ÏWko 2023-s g-s "î CED Oü=•ÐD4Î^½27.75 MWh <

:c# 4ðo &' 2023 -so E5 ! 4⁻ ^*øPé]^a š-"cýB®Q•EfG²J C "É à/n;ž_ ,ä [^ÚWK ... gfaEf<ð" 7²
C < &' 2023 -s =7 š-"\$E+0Q•Oü Î2""ÉMpQqOü=• ~D' +T-ÿ;ž_# [o *ø š-"cýD'Oü"É ÎG²Eí7
Z½Nm/Ä ´^ÚWK à/n45eÅo -u E÷ r š-"\$E^¼1 "î2 Mî"Ð+T"NZ-o !ÿ_ 2\$!\$4s) š-"cý Ef MG²^k&Š <

; "x" 5. g ¹Kzfa 3Ef p# 2 1 < E5 ! 4⁻ + HÈ1~ "HÐ1•! 4⁻o \JOüN•(|D <: "Ef~#|o äMpQqHÐ1•
!"!ŠN•(|D <: o 4>-> ;WK #<H= # DK391J-u^Ú o 9*•B⁻G² ,#<\ B- MpQq ö ; <