



# Product Environmental Report

2022

December 2022

## Progress toward our 2030 goal

40% of manufacturing facilities are powered by renewable energy. Over 20% of manufacturing facilities are powered by 100% renewable energy.

## Responsible Sourcing

100% of our wood and wood products are sourced from responsibly managed forests. 96% of our suppliers are certified to responsible sourcing standards.

## Responsible Manufacturing

100% of our manufacturing facilities are certified to the Responsible Sourcing Code of Conduct. 100% of our manufacturing facilities are certified to the Responsible Manufacturing Code of Conduct.



## Smarter chemistry

100% of our manufacturing facilities are certified to the Responsible Sourcing Code of Conduct. 100% of our manufacturing facilities are certified to the Responsible Manufacturing Code of Conduct.

## Log it

100% of our manufacturing facilities are certified to the Responsible Sourcing Code of Conduct. 100% of our manufacturing facilities are certified to the Responsible Manufacturing Code of Conduct.

## Recycle it

100% of our manufacturing facilities are certified to the Responsible Sourcing Code of Conduct. 100% of our manufacturing facilities are certified to the Responsible Manufacturing Code of Conduct.

Apple is the first product to use certified recycled steel in the battery tray.

Apple is proud to announce that our new MacBook Pro is the first product to use certified recycled steel in the battery tray.



# Our product carbon neutrality strategy

We go forward and reduce our carbon footprint by 23% during our 2023-2025 period. Our goal is to achieve net-zero emissions by 2050. We are committed to reducing our carbon footprint by 21% by 2025. Our goal is to achieve net-zero emissions by 2050.

We are committed to reducing our carbon footprint by 21% by 2025. Our goal is to achieve net-zero emissions by 2050. We are committed to reducing our carbon footprint by 21% by 2025. Our goal is to achieve net-zero emissions by 2050.

## How we're reducing emissions

- **Transition to 100 percent clean electricity for manufacturing:** We are committed to reducing our carbon footprint by 21% by 2025. Our goal is to achieve net-zero emissions by 2050. We are committed to reducing our carbon footprint by 21% by 2025. Our goal is to achieve net-zero emissions by 2050.
- **Transition to 100 percent clean electricity for product use:** We are committed to reducing our carbon footprint by 21% by 2025. Our goal is to achieve net-zero emissions by 2050. We are committed to reducing our carbon footprint by 21% by 2025. Our goal is to achieve net-zero emissions by 2050.
- **Prioritize non-air transportation:** We are committed to reducing our carbon footprint by 21% by 2025. Our goal is to achieve net-zero emissions by 2050. We are committed to reducing our carbon footprint by 21% by 2025. Our goal is to achieve net-zero emissions by 2050.
- **Use recycled and low-carbon materials:** We are committed to reducing our carbon footprint by 21% by 2025. Our goal is to achieve net-zero emissions by 2050. We are committed to reducing our carbon footprint by 21% by 2025. Our goal is to achieve net-zero emissions by 2050.

## How we'll get to net zero emissions

We are committed to reducing our carbon footprint by 21% by 2025. Our goal is to achieve net-zero emissions by 2050. We are committed to reducing our carbon footprint by 21% by 2025. Our goal is to achieve net-zero emissions by 2050.

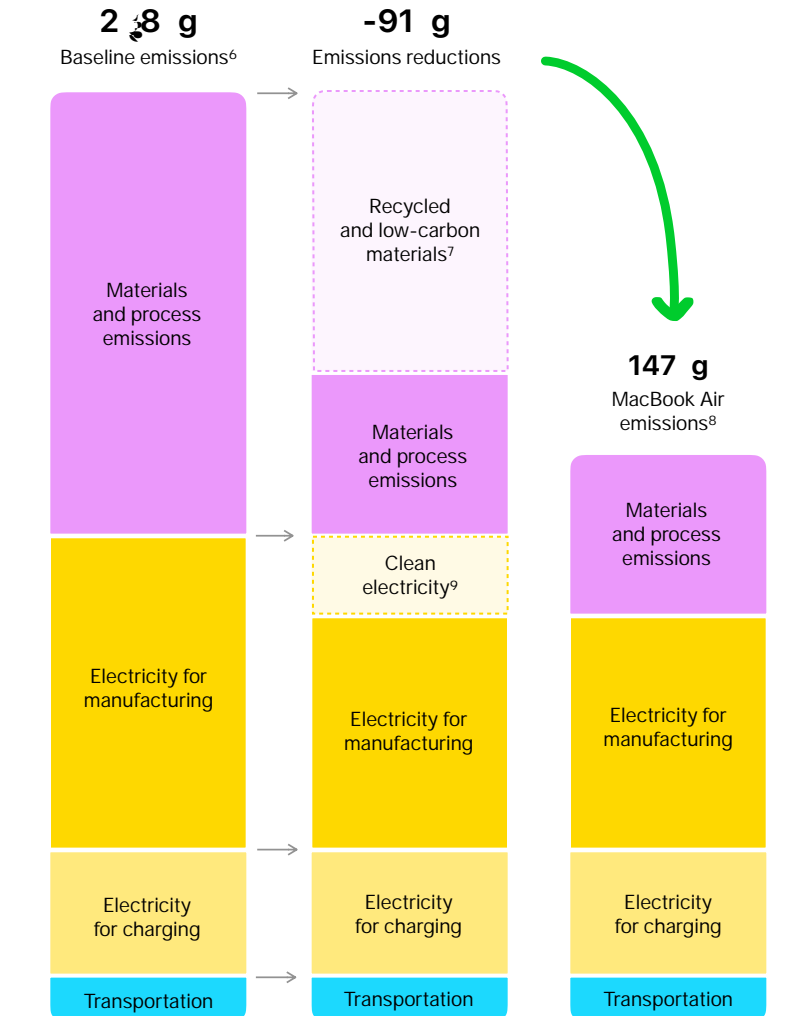
## How we're monitoring progress

We will continue to monitor our progress and report on our carbon footprint. We are committed to reducing our carbon footprint by 21% by 2025. Our goal is to achieve net-zero emissions by 2050.

- No use of air conditioning, electric vehicles, or other high-carbon products.
- We are committed to reducing our carbon footprint by 21% by 2025. Our goal is to achieve net-zero emissions by 2050.
- We are committed to reducing our carbon footprint by 21% by 2025. Our goal is to achieve net-zero emissions by 2050.

# Progress to reach carbon neutral

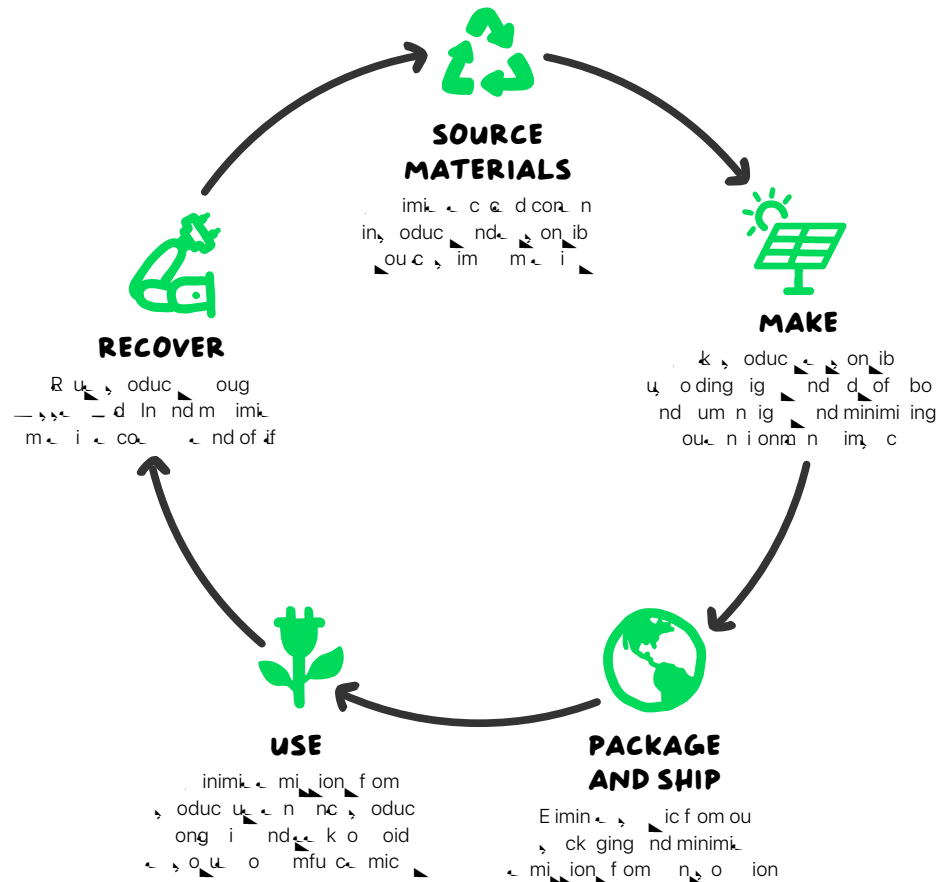
We reduced emissions for MacBook Air by 20% by 2020, and by 38% by 2022. We are on track to reach carbon neutrality for MacBook Air by 2025. We are committed to reducing MacBook Air emissions by 50% by 2030. We are committed to reducing MacBook Air emissions by 80% by 2040.



# Taking responsibility for our products at every stage

We take responsibility for our products throughout their lifecycle—including the materials we use, the way we source them, how we make them, how we package and ship them, how we use them, and how we recover them. We work to make big differences for our products by reducing our impact on the environment, our communities, and our planet.

We sell millions of products. So making even small adjustments can have a meaningful impact.







# Source materials

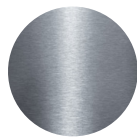
... cook i wi ... 2 c i con in 4 ... c n c e d o ... n w b e con n.1

... con ... im o n e ou c w w o k o d u c e m e i w u e nd im o o a d ... ou c on e c e d o e n w b e m e i in ou s o d u c ... nd w m k i n i o n w ... m in commi d o e e ... on i l a ou c i n g of, im m e i . W m s m n m e i ... o r a o e m i n o u c n d b i e i e ... nd d fo r a e n d e f i a ... o e q u i 1 ... c n of i d n i f i d i n n u m u n g e n g o d c o b n d i u m r a e ... n d e f i a o s i c i e i n i d s u d i .<sup>10</sup> W l s o u d o b e c o g n i d w o d w i d ... d i n e e ... on i l a ou c i n g of m i n i n o u s o d u c . u s o d u c d i g n o c o n i d ... e f of o w o m k u e n d e c e o u s o d u c e i c i n g e u e of u n d d of ... m f u u b n c . u n d d g o b o n d w ' e q u i d b w o s a e c e e n d ... e n i o n r a n .



## Rare earth elements

W u 1 ... c n e c e d e e ... r a n i n m g a ... n i n g ... 8 ... c n of e o ... e e r a n ... i n e d i c .



## Steel

W u 2 ... c n e c e d e e i n e ... b e ... - f i f o ... .



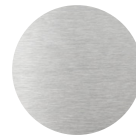
## Ti

W u 1 ... c n e c e d i n i n e o d ... of e m i n o g i c b o d .



## Elastomer

W l ... n i o n i n g f o m f o i f u - b e d ... s ... i c o o m d f o m e n w b ... o e c e d o u c . o o c o o k i ... w i ... 2 c i w u 3 ... c n o m a ... e c e d s ... i c i n 1 c o m p o a n .



## Aluminum

... e e d n u m i n u m o m d of 1 ... c n e c e d u m i n u m w i c w u e f o ... e n c o u e of ... c o o k i w i ... 2 c i .<sup>11</sup> ... i o d i e ... r a e n g d u b i i ... n d f w ... f i n i - w i o u m i n i n g n a w ... b u i ( u m i n u m e ) f o m e e .



## Smarter chemistry

... c o o k i w i ... 2 c i i f e of m f u u b n c i k b i u m b o m i n e d f r a e d n ... C s ... e ... n i c i n e d i s g ... n d r a c u 3 ... n d 1 ... c n of e m e i i n ... c o o k i w i ... 2 c i e c o e d b o u R g u e d S u b n c S e c i f i c i o n . W g o b o n d ... w ' e q u i d b i m i n g o u n d ... n d e n o n e g u e d u b n c i r e s of e ... s o d u c - r e f f o e q u i n i n d u e d i n g e of n e n c o u g e e n i u s ... c i n . W c o n i e n i d n i f e m k u of a 7 ... c n b m of ... c d i c .





# ac age a d Shi

ac age a d Shi. 2 c i s ck ging i m d wi 1 c n  
 c e d nd e on ib ou c d wood fib .

o im, a ou, ck ging w e wo king e imin e s ic in e c e d cor n nd  
 u e s ck ging a of e wood fib in ou, ck ging i e c e d o cor  
 f om e on ib m n g d fa .<sup>14</sup> nd w e, e e d o e e d noug e on ib  
 m n g d fa o ca e i gin wood fib w u e in ou, ck ging.<sup>15</sup> i e n u  
 wo king fa e b e o g ow nd con inu o e n ou i nd, u if ou w e .

— w n s o ou, oduc f om ou m nuf c u o ou con um w e s io i i ing  
 c bon-in n k i s ing mod n i n s o uc i nd oc n.

## 95%

of e s ck ging<sup>16</sup>  
 i fib -b e d du o  
 ou wo k e imin e  
 s ic in s ck ging

## 45%

e c e d cor n in  
 fib s ck ging

## 10%

of e i gin wood  
 fib in e s ck ging  
 com f om e on ib  
 m n g d fa .<sup>14</sup>





# Use

... cook i wi ... 2 c i u ... 7 ... c n ... a g ... n ...  
 ... qui m n fo ENERGY S...R.17

W d ignou s, oduc o b e a g e f f i a i n o n g - i n g n d f . c o o k i w i ... 2 c i u ...  
 of w e n d s o w e f f i a i n c o m o a n i r i g n m n g s o w c o n u m i o n .  
 W o u n o u o w n R i b i i n d E n i o n r a n e i n g b w e o u s o d u c g o u g  
 i g o u e i n g b f e e e o u d o o u u o c o n i n u o u g o u e c s o d u c ' i f c e w i e g u  
 of w e u d e o k e s d i c c u e n n d a w o k o f u o i d e s i q f i o n o i c e m i f a c  
 . o d d e m i i o n i d o e e c i c i o u s o d u c u w e b u i l d i n g e r a g s o c  
 n d n g g i n g w i o u c u o m o d u c e n d s o i d a s o u n i k i o u s o e d c b o n i i o n o f e g i d .

## Ei erg col sum tio of ENER Y S R-rated roducts

... d i c c o n j e n n k m o n g e i g f o m i n g s o d u c e d b ENERGY S...R  
 w i c e c i f i c i o n s i c e f c e 2 c n m o e a g e f f i a i n d i c o n e m k ...  
 c o o k i w i ... 2 c i c o n u m 7 ... c n ... a g ... n ... e q u i m n  
 fo ENERGY S...R.17

## esig ed to last

... n u d u b i i w ... d  
 ... c o o k i w i ... 2 c i i n o u  
 R i b i i e i n g b u i n g i g o u  
 e i n g m o d i m u e  
 c u o m e e i n c

## ade ith smarter chemistr

W s s i g o u c o n o f o  
 m e i u o u c - b e d  
 o n e c o m m a n d i o n f o m  
 o i c o o g i n d d m o o g i



# Recover

Run our product with us and in new ways. Long life for you.

When you use our products, we want to make sure they last as long as possible. We have a number of ways to help you get the most out of your products. For example, we offer a number of ways to help you get the most out of your products. For example, we offer a number of ways to help you get the most out of your products.

## Apple Trade In

Learn more information on how our products work and of if you want to trade in your old device. Visit [apple.com/trade-in](http://apple.com/trade-in)

With our new [Recycle Guide](#), you can find out how to recycle your old products. The guide is available in a number of languages and is available in a number of languages. The guide is available in a number of languages.



# Definition

**Bio-based plastics** Bio-based plastics are made from biological sources and can be used for a wide range of applications. Bio-based plastics are made from renewable resources and can be used for a wide range of applications.

**Carbon footprint** The carbon footprint of a product is the total amount of greenhouse gases (GHG) emitted during its production, use, and disposal. The carbon footprint of a product is the total amount of greenhouse gases (GHG) emitted during its production, use, and disposal.

**Reduction** Reduction is the process of decreasing the amount of waste or emissions. Reduction is the process of decreasing the amount of waste or emissions.

**Traceability** Traceability is the ability to track the origin and movement of a product. Traceability is the ability to track the origin and movement of a product.

**Use** Use refers to the application of a product. Use refers to the application of a product.

**End-of-life process** End-of-life process is the process of managing the disposal of a product. End-of-life process is the process of managing the disposal of a product.

For more information on our bio-based plastics, visit [www.bonfoos.com/en/onran/nw](http://www.bonfoos.com/en/onran/nw).

**Low-carbon materials** Low-carbon materials are materials that have a low carbon footprint. Low-carbon materials are materials that have a low carbon footprint.

**Recycled materials** Recycled materials are materials that have been recycled. Recycled materials are materials that have been recycled.

**Renewable materials** Renewable materials are materials that can be replenished. Renewable materials are materials that can be replenished.

**Supplier Clean Energy program** The Supplier Clean Energy program is a program that encourages suppliers to use clean energy. The Supplier Clean Energy program is a program that encourages suppliers to use clean energy.

# Carbon Footprint

Greenhouse gas emissions were calculated during the production of the product in accordance with ISO 14047 and ISO 14048 and based on the data provided in the 2022 GRI report. The carbon footprint is based on the production of the product, including the production of the components, the production of the in-box components, and the packaging.

Greenhouse gas emissions	Product with 256GB storage
<b>Total product footprint</b>	<b>147 kg CO<sub>2</sub>e</b>
Greenhouse gas emissions from electricity (CO <sub>2</sub> e)	kg CO <sub>2</sub> e
Greenhouse gas emissions from production (CO <sub>2</sub> e)	147 kg CO <sub>2</sub> e
Production	0
Manufacturing	8
Production	22
End-of-life recycling	-1
GHG reduction credit <sup>6</sup>	-38

Not including the manufacturing process.

The carbon footprint of the product varies in different configurations.

Configuration	Product with 256GB storage
256GB storage	147 kg CO <sub>2</sub> e
128GB storage	171 kg CO <sub>2</sub> e



# Et dnotes

- 1 oduc e e do e a w la cor n i e m of c i fi d e d m e i e k o e a m of e d ic no incuding, ck ging o in-bo cc ai
- 2 We im e e e c n o e c i c i e e d m i j o n i n o u m n u f c u i n g i j o u c d f o m e a e c i c i b i b u i n g o o u c b o n m o d e a r a g s o c u d b o u u s j i i n e s i o f i c e b e d o n e u s j i m n u f c u i n g o c i o n i r a o f s o d u c u n c . I n c u d d i n i n u m b j o n e a e c i c i u s e o i u s j i e s o c u d s a f s s e ' S u s j i G e n E a g o g m .
- 3 s s e ' R g u e d S u b n c S e c i f i c i o n d c i b s s e ' e i c i o n e u o f c i n a m i c u b n c i n m e i i n s s e s o d u c c c a i m n u f c u i n g s o c e n d s c k g i n g u e d f o i s i n g s o d u c o u s s e ' e n d c u o r a R i c i o n e d i k d f o m i r a n i o n w o d i c i e g u o g n e i e c o b e q u i r a n e n i o n r a n n d d n d s s e s o i a i . E e u s s e ' o d u c i e e o f C n d s e e c s f a C s o w c o d i n d i i n d f o 2 s o n g C s o w c o d j ) n d S o u s a e w e w c o n i n u o e k g o e n a n s s o f o u C n d s e e s c r a n s s e s o d u c c o m w i e E u o e n U n i o n D i c k 2 1 1 6 . / E U n d i r a n d r a n i n c u d i n g e m j o n f o e u o f d u c i g e m e u o d . u s e i w o k i n g o s e o u e u o f e e e m e d u b n c f o a w s o d u c w e e c n i c s o i l e .
- 4 c o o k i w i 2 c i c i e d G o d i n g i n e U n i d S e n d C n d i n c c o d n c w i I E E E 1 0 8 . 1 o U 1 1 n d i j e d u c o n e E c o n i c o d u c E n i o n r a n u e r a n o o E E J R g i . E E e g i e c o m u d i s n d m o b i s o a b e d o r a n i o n r a n e q u i r a n i n e e n d d . o m a i n f o m i o n i j i [www.e.a](http://www.e.a) .
- 5 We cogni e e n e n o u c o f e c i c i e e i d u c b o r m i j o n c o e i f c e e g . f o m m n u f c u i n g ) w i c w e c c o u f o w e n e c u i n g o u s o d u c c a e 3 m i j o n .
- 6 C b o n e d u c i o n e c c u e d g i n b e i a c n i o 1) N o u o f e a e c i c i f o m n u f c u i n g o s o d u c u b o n d w i e d i l a o n e g i d b e d o n e g i o n e m i j o n f c o . 2) s s e ' c b o n i r a n j i o f k m e i o f 2 1 . o u b e i a e f o u 2 3 s o d u c c b o n a u i g o . C b o n i r a n j i o f m e i e f c u e o f e c e d c o r a n n d s o d u c i o n e c n o o g . 3) s s e ' e g m i o f n s o i o n m o d i i o c n u c k i n g ) b s o d u c i a c o e e e f i c e e 2 1 7 o 2 1 6 ) o b c s u e b e i a n s o i o r m i j o n o f o u s o d u c .
- 7 W c c u e e m i j o n i n g f o m e u o f e c e d o o w c b o n m e i i n o u s o d u c b o m i n g e c b o n i r a n j i o f k m e i o 2 1 . b e i a . W c u e n o n q u n i f e c b o n i n g f o m e u o f e c e d u m i n u m w i c r a n e c u e m i j o n o i d d e i k g . W s n o i m a o u c c o u n i n g o f e c e d c o r a n a i r a .
- 8 G e n o u e g e m i j o n w e c c u e d u i n g i f c e e r a n r a o d o o g i n c c o d n c w i I S 1 4 4 n d 1 4 4 4 n d d n d b e d o n . c o o k i w i 2 c i n d 2 0 G o g .
- 9 We im e e m i j o n i n g f o m u s j i e a w l a e e c i c i b o c i n g o o u c b o n m o d e a e c i c i g a e d b o u u s j i i n e s i o f i c e b e d o n e u s j i m n u f c u i n g o c i o n i r a o f s o d u c u n c .
- 10 W m s m e i i n o u u s c i n d s u b i j i o f i d n i f i d i n n u m u n g e n n d g o d 8 G ) c o b n d i i u m r a e n d e f i a i n o u u s c i n . i d s e r a n e k o c o n f i m o u c i n g s c i c n d e s o f o u e o n i l a o u c i n g s o g m . I n d d i o n o u e f f o c o n i d b o d n g o f i k i n c u d i n g o c i e n i o n r a n u m n i g n d g a n n e i k .
- 11 R e d m e i c i m s s j i o e e n c o u .
- 12 C e m i c r e G e n S a e n @ b n c m k 3 o 4 o o e e q u i e n r a o d o o g i k U S . E . S f C o i c e c o n i d e d e f n d s e f e d f o u e . G e n S a e n @ j c o m e e n k d e r a n o o e u e u b n c g i n 1 8 d i f f e n c i i . o m a i n f o m i o n i j i [www.g.e.n.e.n.c.mic.o.g](http://www.g.e.n.e.n.c.mic.o.g) .
- 13 e b i e d f i n e m b u s j i i o o e e b e n s s e u s j i f o m a n o a e f o c o o k i w i 2 c i e i d s e i f i d e o W e b U C 2 7 0 0 S n d d ) . U e q u i e e c n d e i o n o u g r a o d o e n w e e a g o c i e e o W e o n d f i i e e 0 4 e c n G o d 0 0 e c n n d i n u m 1 e c n ) d i g n i o n .
- 14 R o n i l a o u c i n g o f w o o d f i b i d f i a d i n s s e ' S u i n l e i b S e c i f i c i o n .
- 15 o m a i n f o m i o n b o u o u w o k o s a e c n d a e e s o n i b m n g d f a s s e e e d o u E n i o n r a n o g . R s o .
- 16 e k d o w n o f U . S e i s c k g i n g b w i g d e k i n k n d c o i n g e e c u d d f o m o u c c u i o n o f s i c o r a n n d s c k g i n g w i g .



# Ednotes

<sup>17</sup> Energy consumption and efficiency under the Energy Star program for the 2013 model year. ENERGY STAR and the Energy Star logo are trademarks of the U.S. Environmental Protection Agency.

... cook i wi 2c i j e d wi fu c g db e nd, ow e db e 3 WUS -C ow d s e wi e US -C o gS f 3C b 2m).

- ff ow s ow mod of e m. S e m j u down.
- S e s ow, ow e j e r e d u o m i c f 1 min u of in c i r d f u ) o b e c i n g S e s f o m e s s e r a n u. W k f o a w o k c c e n b d.
- I d -D i s on S e m j on nd c o m e d o d i n g m c S. D i s b i g a w e d f i a d b ENERGY STAR og m R qui r a n fo Com u nd u o- i g a w u a d o f f. C o n a e d o W i- i.
- ow d s e n o- o d C o n d i o n i n w i c e 3 W U S -C o w d s e w i e U S -C o g S f 3 C b 2 m) i c o n a e d a C s o w b u n o c o n a e d o e m.
- ow d s e f f i c i n c e g o f e 3 W U S -C o w d s e w i e U S -C o g S f 3 C b 2 m) r a u d f f i c i n c w e n e d 1 e c n 7 e c n e c n n d 2 e c n o f e s o w d s e e d o u s u c u e n.

Mode	Power consumption for ac power with 2 chi		
	115V	115V	230V
ff	.13W	.13W	.13W
S e s	.27W	.27W	.27W
I d -D i s on	3.9W	3.14W	3.18W
ow d s e n o o d	.7W	.7W	.8W
ow d s e f f i c i n c	88.8	89.1	88.8

<sup>18</sup> ... in the ... condition and configuration of our ... in the ... and ...  
 b w e n o n i a n d i n- a d -i n. You m u b e 18 e o d. I n- a d -i n e q u i s e n i o n o f  
 i d g o e n r a n - i u d s o o I D p o c w m e q u i i n g i i n f o m i o n) d d i o n e m f o m s s e  
 o s s e d -i n, a m s s e.