

(1 (5 * , (\$ 8 6 : (, 6 . U : RKQJHEIXGH
JHPI% GHQ †† II *HEIXGHHQHJLH \$XJXVW RP

*•OWLJ EL

5HJLVWULHUC + (



*HEIXGH

*HEIXGHW\S	IUHLVWHKHQGHV (LQIDPLOLHQ)DFKZHUNK	
\$GUHVVH	/HLPHOEDFKZHJ *UHEHQDX	
*HEIXGHWLLO	:RKQJHEIXGH	
%DXMDKU *HEIXGH	XQJHIKU	
%DXMDKU :IUPHHU]HXJHU		
\$QJDKO GHU :RKQXQJHQ		
HEIXGHQXW]OIFKH \$	Pö <input type="checkbox"/> QDFK † (DXV GHU :RKQI	
:HVHQWOLFKH (QHUJLHWU	I+HU]OU(+HL]XQJ	
:HVHQWOLFKH (QHUJLHWU	I+HU]OU(/DUPZDVVHU	
(UQHXXHUEDUH (QHUJLHQ	\$UW	9HUZHQGXXQJ
\$UW GHU /•IWXQJ	<input checked="" type="checkbox"/>)HQVWHUO•IWXQJ <input type="checkbox"/> /•IWXQJVDDQODJH PLW :IUPHU•FNJHJLQXQJ <input type="checkbox"/> 6FKDFKWO•IWXQJ <input type="checkbox"/> /•IWXQJVDDQODJH RKQH :IUPHU•FNJHJLQXQJ	
\$UW GHU .•KOXQJ	<input type="checkbox"/> 3DVVLYH .•KOXQJ <input type="checkbox"/> .•KOXQJ DXV 6WURP <input type="checkbox"/> *HOLHIHUWH .IOWH <input type="checkbox"/> .•KOXQJ DXV :IUPH	
.QVSHNWLQRQVSIOLFKWLJH	\$QJDDQODJHQ 1IFKVWHV]IOOLJNHLVWGDWXP GHU ,QVSHNWLQRQ	
\$QODVV GHU \$XVVWHOOXQ	<input type="checkbox"/> GHXEDX <input type="checkbox"/> ORGHUQLVLHUXQJ <input type="checkbox"/> 6RQVWLJHV IUHLZLOOLJ (QHUJLHDXVZHLVHV <input checked="" type="checkbox"/> 9HUPLHWXQJ 9HUNDXI bGGHUXQJ (UZHLWHUXQJ	

+LQZHLVH]X GHQ \$QJDEHQ •EHU GLH HGHUJHVLVFKH 4XDOLWIW GHV *F

'LH HGHUJHVLVFKH 4XDOLWIW HLQHV *HEIXGHV (QJDDQODJHQ 1IFKVWHV]IOOLJNHLVWGDWXP GHU ,QVSHNWLQRQ
JHQ RGHU GXUFK GLH \$QJDDQODJHQ 1IFKVWHV]IOOLJNHLVWGDWXP GHU ,QVSHNWLQRQ
(GLH VLFK LQ GHU 5HJHO YRQ GHQ DOOJHPLHQH :RKQIOLFKHQDQJDEHQ XQWHUVFKHLGHV 'LH DQJ
JOHLFKH HUR]OIFKH QJHQ ± VLZHLV HGHUJHVLVFKH VLQG GLH ORGHUQLVLHUXQJ VHVPSIHK
 'HU (QHUJLHDXVZHLV ZXUGH DXI GHU *UXQG ODHUJYRQH]LWVFKHQJHQ (GHUJLHYHUEUDXFKVDXVZHLV 'LH
DXHLWGDUJHVWHOOW =XVIW]OLFKH ,QIRUPDWLRQHQ]XP 9HUEUDXFK VLQG IUHLZLOOLJ
 'HU (QHUJLHDXVZHLV ZXUGH DXI GHU *UXQG ODHUJYRQH]LWVFKHQJHQ (GHUJLHYHUEUDXFKVDXVZHLV
QLVVH VEGWDDUJHVWHOOW
'DWHQHUKHEXQJ %HGDUI 9HUEUDXFK GXUFK (LJHQW•PHU \$XVVWHOOHU
 'HP (QHUJLHDXVZHLV VLQG]XVIW]OLFKH ,QIRUPDWLRQHQ]XU HGHUJHVLVFKHQ 4XDOLWIW EHLJHI•

+LQZHLVH]XU 9HUZHQGXXQJ GHV (QHUJLHDXVZHLVHV

(QHUJLHDXVZHLVH GLHQHQ DXVFKOLH%OLFK GHU ,QIRUPDWLRQ 'LH \$QJDEHQ LP (QHUJLHDXVZHLV E
EH]HLFKQHWHQ *HEIXGHWLLO 'HU (QHUJLHDXVZHLV LVW OHGLJOLFK GDI•U JHGDFKW HLQHQ •EHUVF

\$XVVWHOOHU PLW \$QVFKULIW XQG %HUXIVEH]HLFKQXQJ

+DUDOG 6WHKO
*HEIXGHHQHJLHEHUDWHU LP +DQGZHU
\$P +DLQ D
*HP•QGHQ DQ GHU :RKUD

8QWHUVFKULIW GHV \$XVVWHOOHU

\$XVVWHOOXQ

'DWP GHV DQJZHGHQGHV (* JHJHEHQHIDOOV GHV DQJZHGHQGHV bGGHUXQJVJHVHV]HV]XP (*
QXU LP)DOOH GHV † \$EVDW] 6DW] (* HLQ]XWUDJHQ
OHKUIDFKDQJDEHQ P]JOLFK
EHL :IUPHHU]HQ %DXMDKU GHU HGHUJHVLVFKHQ
.OLPDDQODJHQ RGHU NRPELQLHUWH /•IWXQJV XQG .OLPDDQODJHQ LP 6LQQH GHV † (*

(1 (5 * , (\$ 8 6 : (, 6 . U : R K Q J H E I X G H
J H P I % G H Q † † I I * H E I X G H H Q H U J L H Q \$ X J X V W R P

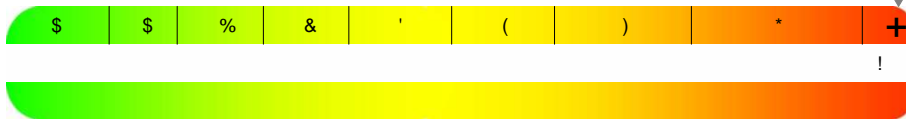
% H U H F K Q H W H U (Q H U J L H E H G D U I G I 5 H J L V W U L H Q C + (

(Q H U J L H E H G D U I

7 U H L E K D X V J D V H Q H Q b T X L Y D O H Q Z V P ö D

(Q G H Q H U J L H E H G D U I G L H V H V * H E I X G H V

N : K P ö D



N : K P ö D

3 U L P I U H Q H U J L H E H G D U I G L H V H V * H E I X G H V

\$ Q I R U G H U X Q J H Q J H P I % * (*

3 U L P I U H Q H U J L H E H G D U I

, V W : H U W N : K P ö D \$ Q I R U G H U X Q J V Z H U W P ö D

(Q H U J H W L V F K H 4 X D O L W I W G H U * H E I X G H K • O O H +

, V W : H U W : P ö . \$ Q I R U G H U X Q J V Z H U W : P ö .

6 R P P H U O L F K H U : I U P H V F K X W] E H 1 H X E D X K D O W H Q

) • U (Q H U J L H E H G D U I V E H U H F K Q X Q J H Q Y H U Z H Q G H W H V 9 H U I D K U H Q

9 H U I D K U H Q Q D F K ', 1 9 X Q G ', 1 9

9 H U I D K U H Q Q D F K ', 1 9

5 H J H O X Q J Q D F K † * (* O R G H O O J H E I X G H Y H U I D K U H Q

9 H U H L Q I D F K X Q J H Q Q D F K † \$ E V D W] * (*

(Q G H Q H U J L H E H G D U I G I > 3 I O L F K W D Q J D E H L Q , P P

N : K P ö D Q @

\$ Q J D E H Q] X U 1 X W] X Q J H U Q H X H U E

1 X W] X Q J H U Q H X H U E D U H U (Q H U J L H Q] X U ' H F N X Q J G H V • I I P H X Q G

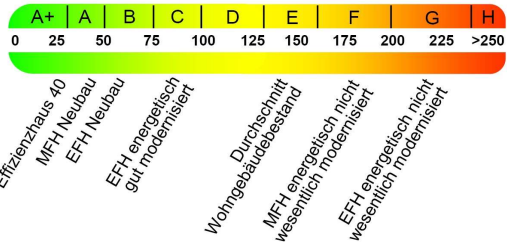
. I O W H H Q H U J L H E H G D U I V D X I * U X Q G G H V † E V D]

\$ U W

6 X P P H

' H F N X Q J G I O L F K V H U • O
D Q W H L O O X Q J

9 H U J O H L F K V Z H U W H (Q G H Q H U J L H



0 D % Q D K P H Q] X U (L Q V S D U X Q J

' L H \$ Q I R U G H U X Q J H Q] X U 1 X W] X Q J H U Q H X H U E D U H U (Q H U J L H Q] X U ' H F N

X Q J G H V : I U P H X Q G . I O W H H Q H U J L H E H G D U I V Z H Q

Q D K P H Q D F K † * (* R G H U D O V . R P E L Q D W L R Q]

* (* H U I • O O W

' L H \$ Q I R U G H U X Q J H Q Q D F K † * (* L Q 9 H U E L C G P Q B L W H T] X * G L H L P (L Q] H O I D O O] X X Q W H I V F K L H G O L

0 D % Q D K P H Q D F K † * (* L Q . R P E L Q D W L R Q J H P E H Q G L \$ E V D W] H E H Q H Q : H U W H N H L Q H 5 • F N V F K O • V V H D .

* (* ' L H \$ Q I R U G H U X Q J H Q Q D F K † * Z H U G H Q (Q H U J L H Y H U E U D X F K ' L H D X V J H Z L H V H Q H Q % H G D U I V Z H

X Q W H U V F K U L W W H Q \$ Q W H H U 3 I O L F K V H U I O L F K H : H U W H Q D F K G H P * (* S U R 4 X D G U D V P H W H U * H

\$ G L H L P \$ O O J H P H L Q H Q J U I % H U L V W D O V G L H : R K

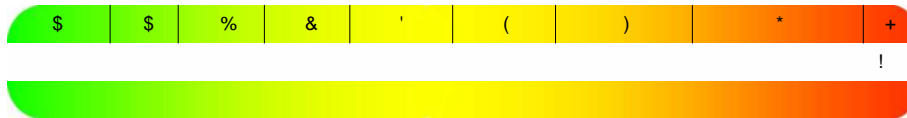
V L H K H) X % Q R W H D X I 6 H L W H G H V (Q H U J L H D X V Z H L V H V
Q X U E H L 1 H X E D X V R Z L H E H L O R G H U Q L V L H U X Q J L P) D O O † \$ E V D W] * (*
Q X U E H L 1 H X E D X
() + (L Q I D P L O L H Q K D X V 0) + 0 H K U I D P L O L H Q K D X V

(1 (5 * , (\$ 8 6 : (, 6 . U : R K Q J H E I X G H
J H P I % G H Q † † † † * H E I X G H H Q H U J L H . \$ X J X V W R P

(U I D V V W H U (Q H U J L H Y H U E U D X F K G 5 H J L V W U L H W C + (

(Q H U J L H Y H U E U D X F K

7 U H L E K D X V J D V H † H Q † B T X L Y D † H Q † P Ö D



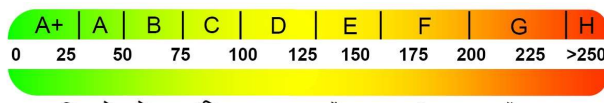
(Q G H Q H U J L H Y H U E U D X F K > 3 I O L F K W D Q J D E H L Q ,

9 H U E U D X F K V H U I D V V X Q J + H L J X Q J X Q G : D U P Z D V V H U

YRQ	ELV	(Q H U J L H W U I J H U	3 U L P I U (Q H U J L H \$ Q W H L O \$ Q W H L O	H Q H U J L H Y H U E U D X F K P Z D V V H U L J X Q J : O L P)	I D N W R U > N : K @ > N : K @ > N : K @ I D N V R U

Z H L W H U H (L Q W U I J H L Q \$ Q O D J H

9 H U J O H L F K V Z H U W H (Q G H Q H U J L H



Effizienzhaus 40
MFH Neubau
EFH Neubau
EFH energetisch gut modernisiert
Wohngebäudebestand
MFH energetisch nicht wesentlich modernisiert
EFH energetisch nicht wesentlich modernisiert

' L H P R G H O O K D I W H U P L W W H O W H Q H U J O H L F K
V L F K D X I * H E I X G H L Q G H Q H Q : I U P H I • U + H L J X
: D U P Z D V V H U G X U F K + H L J N H V V H O L P H E I X G H E H
Z L U G
6 R O O H L Q (Q H U J L H Y H U E U D X F K H L Q H V P L W) H U Q
E H K H L J W H Q * H E I X G H V Y H U J O L F K H Q Z H U G H Q L V
G D V V K L H U Q R U P D O H U Z H L V H H L Q X P E L V
(Q H U J L H Y H U E U D X F K D O V E H L Y H U J O H L F K E D U H
. H V V H O K H L J X Q J J X H U Z D U W H Q L V W

(U O I X W H U X Q J H Q] X P 9 H U I D K U H Q

' D V 9 H U I D K U H Q] X U (U P L W W O X Q J G H V (Q H U J L H Y H U E U D X F K V L W G X U F K G D V * (* Y R U J H J H E H C ' L H : H U W I
* H E I X G H Q X W] O Q F K G H P * (* G L H L P \$ O O J H P H L Q H Q J U] % H U L V W D O V G L H : R K Q I O I F K H G H V * H E I X G H V ' H
* H E I X G H V Z H L F K W L Q V E H V R Q G H U H Z H J H Q G H V : L W W H U X Q J V H L Q I O X V V H V X Q G V L F K I Q G H U C G H Q 1 X W]

V L H K H) X % Q R W H D X I 6 H L W H G H V (Q H U J L H D X V Z H L V H V
J H J H E H Q H Q I D O O V D X F K / H H U V W D Q G V] X V F K O I J H : D U P Z D V V H U R G H U . • K O S D X V F K D O H L Q N : K
() + (L Q I D P L O L H Q K D X V 0) + 0 H K U I D P L O L H Q K D X V
+ R W W J H Q R W K 6 R I W Z D U H (Q H U J L H E H U D W H U 3 U R I H V V L R Q D O

(1 (5 * , (\$ 8 6 : (, 6 . U : R K Q J H E I X G H
J H P I % G H Q † † I I * H E I X G H H Q H U J L H J \$ X J X V W R P

(P S I H K O X Q J H Q G H V \$ X V V W H O O H U \ 5 H J L V W U L H U C + (

(P S I H K O X Q J H Q] X U N R V W H Q J • Q V W L J H Q 0 R G H U Q L V L H U X Q J

0 D % Q D K P H Q] X U N R V W H Q J • Q V W L J H Q 9 H U E H V V H U X Q J G H U X H U J L H H I I L] L H Q] V L Q G

(P S I R K O H Q H 0 R G H U Q L V L H U X Q J V P D % Q D K P H Q

1U	%DX RGHU \$QODJHQWHLOH	0D%QDKPHQEHVFKUHLEX HLQ]HOQHQ 6FKULWVH	HPSIRKOH Q LQ = X DOV JHVFKIW]W JUI%HUADKPH 0RGHUQL VLHUXQJ	IUHLZLOOLJH \$QJDEHQ W#HVFKIW]WH WLRQV]HLW.LORZDWWV (QGHQHUJL	EHQ RVWHQ DUWH XQGH I
	+HL]XQJ	\$XVWDXVFK GHU YRUKDQG JHJHQ HLQ *HUIW PLW QHXHU	HQ] g O XHL]XQJ %UHQQZHUWHFKQLN		
	'DFK	'DFKGIPPXQJ XP FP	<input type="checkbox"/> <input checked="" type="checkbox"/>		

ZHLWHUH (LQWUIJH LP \$QKDQJ

+LQZHLV 0RGHUQLVLHUXQJ V H P S I H K O X Q J H Q I • U G D V * H E I X G H G L H Q H Q O H G L J O L F K G H U , Q I R U P D W L R Q
6LH VLQG NXU] JHIDVVWH +LQZHLVH XQG NHLQ (UVDW] I•U HLQH (QHUJLHEHUDW XQJ

*HQDXHUH \$QJDEHQ JX GHQ (P S I H K O X Q J H Q)
VLQG HUKIOWOLFKEHL XQWHU \$ P + D L Q D * H E I X G H H Q H U J L H E H U D W H U L P + D Q G Z H U N * H P • Q G H Q D Q G H U : R K U D

(U J I Q] H Q G H (U O I X W H U X Q J H Q] X G H Q \$ Q \$ Q J D E H Q I H U J L H E H U D W H U L V

VLHKK)X%QRWH DXI 6HLWH GHV (QHUJLHDXVZHLVHV

+RWWJHQRWK 6RIWZDUH (QHUJLHEHUDWHU 3URIHVVLRODO

(1 (5 * , (\$ 8 6 : (, 6 . U : R K Q J H E I X G H
J H P I % G H Q † † I I * H E I X G H H Q H U J L H \$ X J X V W R P

(U O I X W H U X Q J H Q

\$ Q J D E H * H E I X G H W H L O ± 6 H L W H

% H L : R K Q J H E I X G H Q G L H J X H L Q H P Q L F K W X Q H U R H E (Q G H Q H U J L H Y H U E U D X F K ± 6 H L W H
D O V : R K Q J Z H F N H Q J H Q X W J W Z H U G H Q L V W G L H H S F X Q M Q H E Q X Y Q R Q G H V J (X Q G J L D H U P Z D V V H U N R V W H Q Q D F K
D X V Z H L V H V J H P I % † \$ E V D W J 6 D W J * (* D X I G H U C Q K E I K B E W H I D X J X U X Q G D Q G H U H U J H H L J Q I W H U 9 H U E
E H V F K U I Q N H Q G H U J H W U H Q Q W D O V : R K Q J H E I X G H H Q E H L E Z H L D Q G H Q G H L V Q H H U H K M H L P E U D X F K V G D W H Q G H V J
(L Q J H O Q H Q † * (* ' L H V Z L U G L P (Q H U J L H D X V Z E G V Q L F K K G H U H E Q D H E Q H Q : R K Q H L Q K H L W H Q J X J U X Q G
Ä * H E I X G H W H L O 3 G H X W O L F K J H P D F K W (Q H U J L H Y H U E U D X F K I • U G L H + H L J X Q J Z L U G D Q K D Q G G H U
: H W W H U G D W H Q X Q G P L W K L O I H Y R Q . O L P D I D I W R U H Q D X
W H Q O L W W H O Z H U W X P J H U H F K Q H W 6 R I • K U W : H L V S L H O V

(U Q H X H U E D U H (Q H U J L H Q ± 6 H L W H

+ L H U Z L U G G D U • E H U L Q I R U P L H U W Z R I • U X Q G L Q H Z H O F K H Q J S O W H I Q U C H W H H G E D U G W H U Q L F K W J X H L Q H U
(Q H U J L H Q J H Q X W J W Z H U G H Q % H L 1 H X E D X W H Q G H O W * K I H I W G H L W H U (Q G H O E H U Q J M H U E U D X F K J L E W + L Q Z H
1 X W J X Q J H U Q H X H U E D U H (Q H U J L H Q G D J X Z H L W F K W H 3 D O D E H I W G H V * H E I X G H V X Q G V H L Q H U + H L J X Q J V D Q
V L J Q D O L V L H U W H L Q H Q J H U L Q J H Q 9 H U E U D X F K (H L Q 5 • F N V
H U Z D U W H Q G H Q 9 H U E U D X F K L V W M H G R F K Q L K W P J J O L F

(Q H U J L H E H G D U I ± 6 H L W H

' H U (Q H U J L H E H G D U I Z L U G K L H U G X U F K G H Q G D K I U H U S U I D P I R K N Q G D W H I Q E H L G D I H I O Q H U : R K Q H L Q K H L W H Q V
X Q G G H Q (Q G H Q H U J L H E H G D U I G D U J H V W H O O W Y R B G H S Q D D E H G I Z H R K G H L Q K H K W H Q L P * H E I X G H Y R Q G H U
U L V F K H U P L W W H O W ' L H D Q J H J H E H Q H Q : H U W H X Z H G S H C D R I G G E M U G * X H K O C H O D H H G K I D O W H Q G H U % H Z R K Q H U
% D X X Q W H U O D J H Q E J Z J H E I X G H E H J R J H Q H U ' D W I P Q D X Q G O I Q W H U H S J Q G H K U R W Y R G H Z L U G K L H U I • U H L Q S D X V F
V W D Q G D U G L V L H U W H Q 5 D Q G E H G L Q J X Q J H Q J % L W F K E G H Q M L C P W L K Q W H Q . G L A D G D W H Q D X F K V H I D V V X Q J H
G H I L Q L H U W H V 1 X W J H U Y H U K D O W H Q V W D Q G D U G H U L S H U W H Q H Q G K E D M H P S I H W I Z W X G E X H L G G H Q G E W H I D O H Q L Q C
: I U P H J H Z L Q Q H X V Z E H U H F K Q H W 6 R O I V V W V L E K G H E H Q J P Z D W H I H V F K H O A D X I D O L G H W W I S L V F K H I H U E U D X F K
G H V * H E I X G H V X Q D E K I Q J L J Y R P 1 X W J H U Y H U K D O W H Q F X N Q L F R W L G H W * B W M F K H O V D L H O W I • U G H Q 9 H U E U D X F K Y
E H X U W H L O H Q , Q V E H V R Q G H U H Z H J H Q G H U V W S Q D D U B Q V J H U S D X K E N K O X E H G 2 E X Q G H Q Z L H Z H L W G L H J H Q
H U O D X E H Q G L H D Q J H J H E H Q H Q : H U W H N H L Q H 5 • F O I G E K Q U M D M D X Q J G H L Q W H D J W Q J F K O V L Q G L V W G H U 7 D E H O O
F K H Q (Q H U J L H Y H U E U D X F K J X H Q W Q H K P H Q

3 U L P I U H Q H U J L H E H G D U I ± 6 H L W H

' H U 3 U L P I U H Q H U J L H E H G D U I E L O G H W G L H (Q H U J L H H 3 L J J P H O J G H H V J H E M K G B M D E F K U H K W D X V G H P I • U G D V *
E H U • F N V L F K W L J W Q H E H Q G H U (Q G H Q H U J L H P L W K G E O Q H Y R I C H 3 W H U F E U D X F K I K H H I N D N U W R U H G H U 3 U L P I U H Q H U J L
D X F K G L H V R J H Q D Q Q W H Ä 9 R U N H W W H 3 (U N X Q G K Q J P U H F L K O O Q Q J I D N W R W H H Q X Q J P L W W H O W G L H G L H 9 R
8 P Z D Q G O X Q J G H U M H Z H L O V H L Q J H V H W J W H Q (Q H U J L H H V O U (Q H H W J) % W F H L J J O E H D V F N V L F K W L J H Q
6 W U R P H U Q H X H U E D U H (Q H U J L H Q H W F (L Q N O H L Q H U : H U W V L J Q D O L V L H U W H L Q H Q
J H U L Q J H Q % H G D U I X Q G G D P L W H L Q H K R K H (Q H U J L H E K I D X V J H D M H P L Z V L H R Q R G E H H L W H X Q G
5 H V V R X U F H Q X Q G G L H 8 P Z H O W V F K R Q H Q G H (Q H U J L H W Q X M P X Q J L P I U H Q H U J L H E H G D U I R G H U G H P 3 U L P I U H
E X Q G G H Q 7 U H L E K D X V J D V H P L V L R Q H Q G H V H E I X G H V Z

(Q H U J H W L V F K H 4 X D O L W I W G H U * H E I X G H K • O O H W E H I R K E H Q G L R [L G H P L V V L R Q H Q D X V J H Z L H V H Q

\$ Q J H J H E H Q L V W G H U V S H J L I L V F K H D X I G L H Z I U P H • E H U W U D J H Q G H 8 P I D V
V X Q J V I O I F K H E H J R J H Q H 7 U D Q V P L V L R Q V Z I U P H Y G U R K W D Q J D E E G V F K U R P R W L G L H Q D Q J H L J H Q ± 6 H L W H
G X U F K V F K L W W O L F K H H Q H U J H W L V F K H 4 X D O L W D W K D O H P U (Z E L P H W E H K W W G L D H B C O G L F K W P L Q , P F R E L O L H Q D
I D V V X Q J V I O I F K H Q \$ X % H Q Z I Q G H ' H F N H Q) H Q V S E N D W H W F (* H I H O H Q Q V E H X G S O J D E H Q J X P D F K H C ' L H G D I • U
(L Q N O H L Q H U : H U W V L J Q D O L V L H U W H L Q H Q J X W \$ Q J D E X I O L F K G G G H P H Q F K I X W H D S W X Z H U V J X H Q W Q H K P H Q M
G H P V W H O O W G D V * (* E H L 1 H X E D X W H Q \$ Q I R U G H G K Q J H Q W E G H R C M B P P H U O L F K H Q
: I U P H V F K X W J 6 F K X W J Y R U H E H U K L W J X Q J H L Q H V * H E I X G H V

(Q G H Q H U J L H E H G D U I ± 6 H L W H

' H U (Q G H Q H U J L H E H G D U I J L E W G L H Q D F K W H F K Q W F X K H Q G F R I O H O H Q E H L G L R I Q Q I F W S Q M D K W V S X Q N V H I • U J U R E I
O L F K E H Q J W L J W H (Q H U J L H P H Q J H I • U + H L J X Q J / • W X Q H B I Q G H V L P L Z D G H I Q E S H U I O L H L F K V Z H U W H Q D Q G H U H U •
W X Q J D Q (U Z L U G X Q W H U 6 W D Q G D U G N O L P D X Q S U H L B R G S D Q G Q X H V E J K Q J M G E S U Q D X C G H U H U X Q J H I I K U G L
J H Q H U H F K Q H W X Q G L V W H L Q , Q G L N D W R U I • U G H U (Q H U J L K I V N I D W H U R J L H Q G H O L H B H X G H V
X Q G V H L Q H U \$ Q O D J H Q W H F K Q L N ' H U (Q G H Q H U J L H E H G D U I L V W G L H (Q H U J L H P H Q J H
G L H G H P * H E I X G H X Q W H U G H U \$ Q Q D K P H Y R Q V W D Q G D U G L V L H U W H Q % H G L Q J X Q J H Q
X Q G X Q W H U % H U • F N V L F K W L J X Q J G H U (Q H U J L H Y H U O X V W H J X J H I • K U W Z H U G H Q P X V V
G D P L W G L H V W D Q G D U G L V L H U W H , Q Q H Q W H P S H U D W X U G H U : D U P Z D V V H U E H G D U I X Q G
G L H Q R W Z H Q L J H / • I W X Q J V L F K H U J H V W H O O W Z H U G H Q N J Q Q H Q (L Q N O H L Q H U : H U W
V L J Q D O L V L H U W H L Q H Q J H U L Q J H Q % H G D U I X Q G G D P L W H L Q H K R K H (Q H U J L H H I I L J L H Q)

\$ Q J D E H Q J X U 1 X W I X Q J H U Q H X H U E D U H (Q H U J L H Q ± 6 H L W H

1 D F K G H P * (* P • V V H Q 1 H X E D X W H Q L Q E H V W L P P W H P 8 P I D Q J H U Q H X H U E D U H
(Q H U J L H Q J X U ' H F N X Q J G H V : I U P H X Q G . I O W H E H G D U I V Q X W J H Q , Q
G H P) H O G Ä \$ Q J D E H Q J X U 1 X W J X Q J H U Q H X H U E D U H (Q H U J L H Q 3 V L Q G G L H \$ U W G H U
H L Q J H V H W J W H Q H U Q H X H U E D U H (Q H U J L H Q G H U S U R J H Q W X D O H ' H F N X Q J V D Q W H L O D P
: I U P H X Q G . I O W H H Q H U J L H E H G D U I X Q G G H U S U R J H Q W X D O H \$ Q W H L O G H U 3 I O L F K W H U
I • O O X Q J D E J X O H V H Q ' D V) H O G Ä 0 D % Q D K P H Q J X U (L Q V S D U X Q J 3 Z L U G D X V J H
I • O O W Z H Q G G L H \$ Q I R U G H U X Q J H Q G H V * (* W H L O Z H L V H R G H U Y R O O V W I Q G L G X U F K
8 Q W H U V F K U H L W X Q J G H U \$ Q I R U G H U X Q J H Q D Q G H Q E D X O L F K H Q : I U P H V F K X W J J H
P I % † * (* H U I • O O W Z H U G H Q

V L H K H) X % Q R W H D X I 6 H L W H G H V (Q H U J L H D X V Z H L V H V

+ R W W J H Q R W K 6 R I W Z D U H (Q H U J L H E H U D W H U 3 U R I H V V L R Q D O