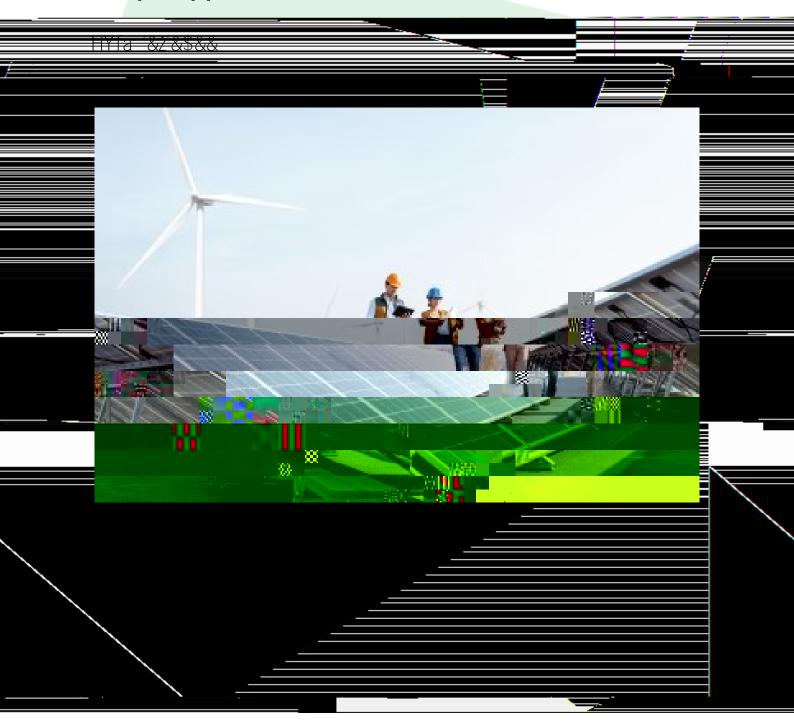


GSOE9017, SOLA5057

9bYf[m'9Z]W]YbWm



7ci fgY⁻Cj Yfj]Yk

GHJZ7cbHJWh8YHJ]`g

7cbj Ybcfg

BUa Y	9a U]`	5j U]`UV]`]lm	@cWUh]cb	D\cbY
; Uj]b 7 cb]VYYf	["Wcb]VYYf4 i bgk "YXi "Ui_	D`YUgY`WcbrUWrij]U Ya U]`	F cca '&() H9H6	

GWXcc``7cbHJWhi±bZcfa Uh]cb

 $: cf'W'ffYbhghi XYbhgž'U```Ybei]f]Yg'Zcf'H\Y'GW\cc``cZD\chcj c'hU]Wg'UbX'F YbYk UV'Y'9bYf[m'UfY'a UbU[YXVmH\Y'Bi WYi g.$

 $\underline{9b[]bYYf]b[\underline{`Gh~XYbhGi~ddcfhGYfj~]WYg`-\dot{`H}Y\dot{`Bi~WYi~g'!~Ybfc`a~Ybhz`dfc[fYgg]cb'WXYW_gz'WUg\\\underline{`fYei~Yghgz'}$

7ci fgY'8YW]`g

I b]hg cZ7fYX]h * *

Gi a a UfmcZh\Y 7ci fgY

H\]g`Wci fgY`ZcW gYg`cb`h\Y`YZ]W]Ybhi gY`cZYbYf[mž'dfYXca]bUbhm]b`fYg]XYbh]U`ž'Wca a YfW]U`ž'UbX]bXi ghf]U``gYh]b[g"``HfUbgdcfhž'k UhYf`UbX`YbYf[mYZ]W]YbWndc`]Wn]b`5i ghfU`]U`k]```U`gc`VY`Wcj YfYX"'`5b i bXYfghUbX]b[`cZh\Y`hYW\b]WU``UbX`YWcbca]Wdcgg]V]`]h]Yg`cZYbYf[mYZ]W]YbWn]b`h\Y`UfYU`cZYbYf[m gmghYa g`]g'j]hU``Zcf`U``Yb[]bYYfgž'UbX`YgdYW]U``ml\cgY`]bj c`j YX`]b`a UbU[Ya YbhcZYbYf[mWcghg`UbX Ybj]fcba YbhU``dYfZcfa UbWY`cZU`k]XY`fUb[Y`cZcf[Ub]gUh]cbgž'Y"["`Vi g]bYggYgž'[cj Yfba Ybhcf[Ub]gUh]cbg UbX`di V`]W]bgh]h h]cbg"

; GC 9- \$%-]g'Ub'Y'YW1j Y'Wti fgY'f5Xj UbW'X'8]gW]d`]bUfm? bck `YX[YŁ'Zcf'h\Y'D\chcj c`hJ]WUbX'Gc`Uf 9bYf[mfGC @59G) ' (%£'UbX'A UghYfg'cZ9b[]bYYf]b['GW]YbW']b'D\chcj c`hJ]WUbX'Gc`Uf'9bYf[mfGC @57G, ' ' , Ł"''GC @5) \$) +]g'Ub'Y'YW1j Y'Wti fgY'f8]gW]d`]bUfm? bck `YX[YŁ'Zcf'h\Y'A UghYfg'cZ9b[]bYYf]b['GW]YbW']b'FYbYk UV'Y'9bYf[mfGC @58G, ' ' , Ł"

₹5i glfU`]U'UbX'h\Y'k cf`X'UfY'hc fYXi WYYa]gg]cbg'cZ[fYYb\ci gY'[UgYgž'Vch\fYbYk UV`Y'YbYf[m'UbX a cfY'YZ]W]Ybhi gY'cZh\UhYbYf[mk]``VY'fYei]fYX"'9bYf[mYZ]W]YbWn]g'h\Y'W\YUdYghž'ZJghYghž'gUZYghUbX g]a d`Yghk Umhc fYXi WYYa]gg]cbg"'H\]g'Wci fgY'Wcj Yfg'h\Y'j Uf]ci g'a Yh\cXc`c[]Ygž'hYW\bc`c[]Yg'UbX dc`]W]Yg'h\UhWJb'VY'i gYX'hc fYXi WY'YbYf[mi gYž'k \]'Y'gh]``'dfcXi W]b['k\Uhih\UhYbYf[m]g'bYYXYX'Zcf'!\YUhz`][\hUbX'a cj Ya Ybh'Hcd]Wg'Wcj YfYX']bWi XY'W ffYbh'UbX'dfYX]WYX'YbYf[mi gY'UbX'UggcW]UhYX'; <; Ya]gg]cbg/fYg]XYbh]U``UbX'Wca a YfW]U``dUgg]j Y'gc`Uf`XYg][b/YbYf[ma UbU[Ya Ybh'dfc[fUa g/Vi]`X]b[a UbU[Ya Ybh'gmghYa g/\YUh]b[žj Ybh]`Uh]cb`UbX'U]f`WcbX]h]cb]b[/UbX'Wcbgi a Yf'dfcXi W*g'UbX'cZZ]WYYei]da Ybh''H\Y']a dUWg'cZhfUbgdcfh'UfY'U`gc'Wcj YfYXž'hc[Yh\Yf'k]h\'cddcfhi b]h]Yg'hc fYXi WY'hfUbgdcfh

 $\label{thm:continuous} i \ bXYfgHUbX]b[\ \ cZ_{fghm}YUf'i \ b]j \ Yfg]mid\ mg]Wg']g'gi \ ZZ_{fghm}YUf'i \ b]j \ Yfg]mid\ mg]Wg']g'gi \ ZZ_{fh}Ybh'' \ K \ YY_mDfcV'Ya \ GYhg'k]``Wcj \ Yf'U``hcd]Wg'Zcf'h\]g'Wci \ fgY''5 `XYa \ cbghfUhcf'k]``VY'Uj U]`UV'Y'hc'[\]j \ YUgg]ghUbWY'Xi \ f]b[\ YUW\ cZh\ Y'gW\ YXi \ YX'k \ cf_g\ cd'gYgg]cbg''$

; i Ygh`YWi fYg`Zcfa 'Ub`]a dcflUbhdUfhcZh\Y`Wci fgYžk]h\`UWUXYa]WYI dYfhg`[]j]b['h\Y]f`cd]b]cbg`cb hcd]Wg`]b`YbYf[mYZ]WJYbWn'

5ggYgga Ybh

ffUj Y``]b['hc'UbX'Zfca 'i b]j Yfg]hm#k cf_'cj Yf'U'mYUf'fbf'Ub'Yei]j U'Ybh'&i fbYm'z" \$\DXX\]h\cb'gh XYbhg'k \[``]\XYbh\ZmX\]ZZYfYbhk Umg'h\YgY']a dUWhg'Wci 'X'VY'a \[b]a \[nYX"

 $H\setminus [g:UbU:mg]g:k]:VY:WUff]YX:ci:h]b:dfc:YWhk:cf_Xi:f]b[:h\Y:WUggYg:cZk:YY_g:%282]"$

H\Y`fYdcfhaighVY`giVa]hYX`cb!`]bY`j]U`AccX`Y`]b`dXZZcfa"`>SfWdWbadfei[^Sff6SUfSbW`SfkaX'_bWdVSk`f]bWiX]b[`kYY_YbXgŁ`id`hc`)`XUmg`UZhYf`k\]W\`h\Y`Ugg][baYbhWbbchVY`giVa]hYX"`FYdcfnggiVa]hYX`UZhYf`fYgi`hg`\UjY`VYYb`fY`YUgYX`k]```]bWfh\Y`aUl]aia'dYbU`hm

5ggYgga YbhWf]hYf]U

5@D'UbX'`YWiffYaUhYf]U`ZfcakYY_g'%l'

9bYf[mgmghYa 'UbU'mg]g'g_]'`g

F Ydcfhik f]h]b['g_]``g

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5ggYgga Ybh`Yb[h\. % DU[Yg

8i Y'XUhY. '%")) da ': f]XUm&&bX'>i `mfk YY_', Łij]U'A ccX'Y

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@UV'%'Bai Wd8SUfad>STacSfack, 'A UlYf]U''Zfca 'k YY_g'&'/''

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8i Y'XUhY. '%%")) da 'YUVX'A cbXUm

 $\label{eq:continuous} K YY_mei]n'VUgYX'cb'h\Y'Wci fgY'WcbhYbh''H\YgY'k]```VY'Uj U]`UV`Y'cb'A ccX`Y'Zcf'YUW\'k YY_'cZh\Y Wci fgY''$

A i `h]d`Y`W\c]\WY`UbX`g]a d`Y`Ubgk Yfg

% ZcfYUWX cZ, ei]nnYg1, ı

5ggYgga YbhWf]hYf]U

9UWX k YY_'g'ei]n'k]``'hYgha UhYf]U``Zfca 'h\Y'dfYj]ci g'k YY_"

5ggYgga Ybh) :]bU`9l Ua

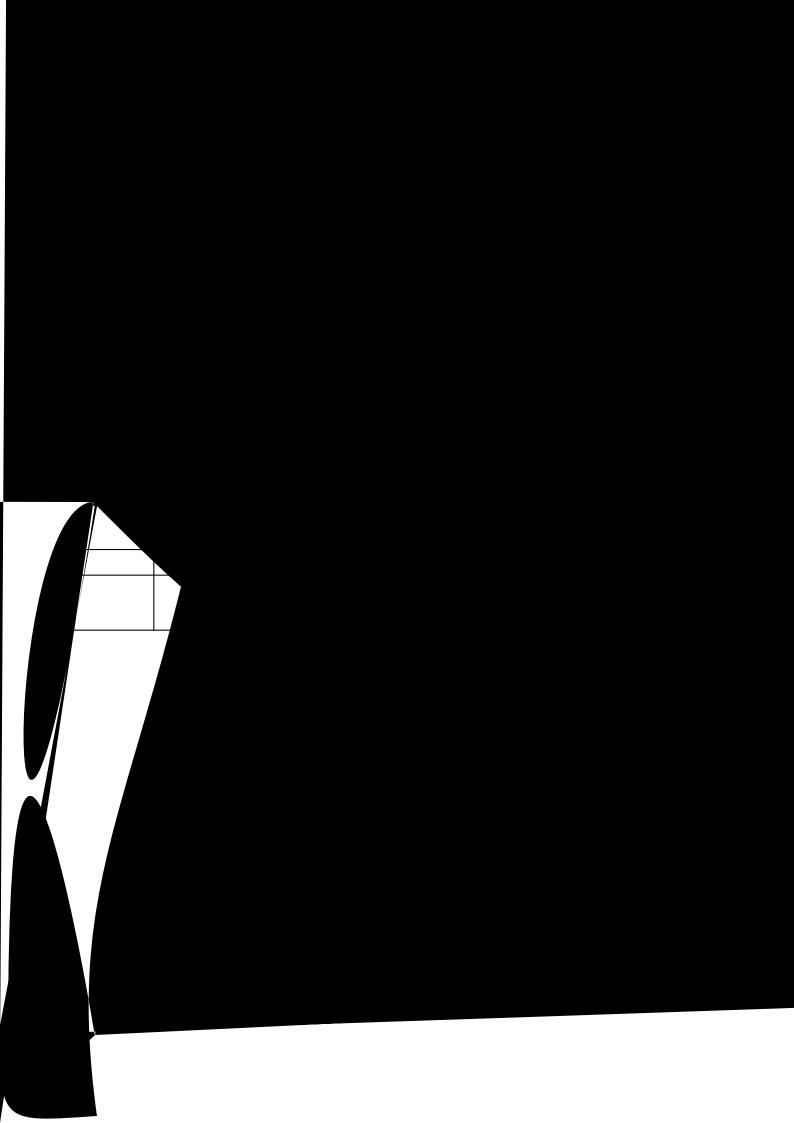
5ggYgga Ybh`Yb[h\.'&'\ci fg 8i Y'XUhY.'9l Ua 'dYf]cXž'XUhY'H67 A Uf_g'fYhi fbYX.''l dcb'fY`YUgY'cZZ]bU`'fYgi `hg

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5qqYqqa YbhWf]hYf]U

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<u> </u>	



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•

\htdg.##a ccX`Y"hY`h'i bgk "YXi "Ui #c[]b#bXYI "d\d"

Gi Va]gg]cb cZ5ggYgga YbhHUg_g

K cf_'gi Va]hh/X``Uh/`k]h\ci h\Ub'\Uddfcj YX`gdY\\JU``\Wcbg]XYfUh]cb`cf`YI h/bg]cb`\Vmh\Y`\Wci fgY`\WccfX]bUhcf`cf XY`Y[Uh/X`Ui h\cf]hm]g`gi V^Y\Whrc`U``Uh/`dYbU`hmcZ) i `a Uf_`fYXi \W]cb`dYf`XUmž\\WddYX`UhZ]j Y`XUmg`f\\\$\\$\ci fgŁ`Zfca `h\Y`UggYgga YbhXYUX`]bYž\UZh/f`k\]\W``U`gh XYbh\\Ubbchgi Va]h\Ub'\UggYgga Ybh±\\ci bg]gh/bh k]h\`I BGK `5ggYgga Ybh=a d`Ya Ybh\Jh]cb`Dfc\WXi fY"

H\Y^UHY^dYbU`hm`]g`Udd`]YX`dYf`WU`YbXUf`XUmf]bWi X]b[`k YY_YbXg`UbX`di V`]W\c`]XUmgŁ'h\Uhh\Y UggYgga Ybh`]g`cj YfXi Y"`H\YfY`]g`bc`dfc!fUhU`cZh\Y``UhY`dYbU`hm`Zcf`gi Va]gg]cbg`a UXY`dUfhk Umh\fci [\'U\XUm'

K cf_'gi Va]hh'X`'UZhYf'h\Y`'XYUX`]bY`Zcf''UVgc`i hY`ZU]''`]g'bchUWWdhYX`'UbX`'U'a Uf_'cZnYfc`k]```VY`'Uk UfXYX Zcf'h\Uh'UggYgga Ybh']hYa "

: cf'gca Y'UggYgga Ybh']hYa gž'U'``UhY'dYbU`hma Umbch'VY'Uddfcdf]UhY"'H\YgY'UfY'WYUf'm']bX]\WUhYX']b'h\Y Wci fgY'ci h']bYz'UbX'gi W\'UggYgga Ybhg'fYWY]j Y'U'a Uf_'cZnYfc']Z'bch'Wca d`YhYX'Vmh\Y'gdY\\JZ]YX'XUhY" 91 Ua d`Yg']bWi XY.

U"''K YY_`mcb`]bY`hYghg`cf``UVcfUhcfmik cf_`k cfh\`U`ga U```dfcdcfh]cb`cZh\Y`gi VYWha Uf_žcf

V"''C b`]bY'ei]nnYg'k \YfY'Ubgk Yfg'UfY'fY'YUgYX'hc'gh XYbhg'cb'Wca d'Yh]cbž'cf

W'`DfcZYgg]cbU``UggYgga Ybhih\Uh\Yi]bhYbh]cb`]g'hc'WfYUhY'Ub'Ui h\Ybh]WUggYgga Ybhih\Uh\Ug'UbUVgc`i hY'gi Va]gg]cb'XUhYžcf

X"``DUgg# U]``UggYgga Ybh'hUg_g"

5 WUXYa]W<cbYghmUbX D`U[]Uf]ga

 $\label{thm:continuous} IBGK ``Ug`Ub`cb[c]b[`Wcaa]haYbhhc`ZcghYf]b[``U`W``hifY`cZ`YUfb]b[`]bZcfaYX`VmUWUXYa]W]bHY[f]hm'`5``IBGK ``ghiXYbhg``UjY`U`fYgdcbg]V]`]hmhc`UX\YfY`hc`h\]g`df]bW]d`Y`cZUWUXYa]W]bHY[f]hm'`D`U[]Uf]gaibXYfa]bYg`UWUXYa]W]bHY[f]hmUbX`]g`bchhc`YfUhYX`UhIBGK "`B'SY[Sde_SfG@EI[eVWY] WW Sege[YfZWiadVead[VWSeaXafZWdeS`VbSee[YfZW_aXXSekagdai`ž$

Mci 'UfY'U'gc'fYa]bXYX'h\UhWUfYZ ``h]a Y'a UbU[Ya Ybh]g'Ub']a dcftUbhdUfhcZgh XmUbX'cbY'cZh\Y]XYbh]Z]YX'WUi gYg'cZd`U[]Uf]ga ']g'dccf'h]a Y'a UbU[Ya Ybh'Gh XYbhg'g\ci `X'U``ck 'gi Z]W]Ybh'h]a Y'Zcf fYgYUfW\žXfUZ\]b['UbX'h\Y'dfcdYf'fYZYfYbW]b['cZgci fWYg']b'dfYdUf]b['U``'UggYgga Ybh'lUg_g''

⊋d`U[]Uf]ga i]gʻZci bXi]b`mci f`k cf_k \Yb'mci 'UfY']b`Z[fghmYUfz'mci f`YVWi fYf`k]``cZYf`mci 'Ugg]gHUbWY hc
]a dfcj Y`mci f'UWUXYa]Wg_]``g"'H\Yma UmUg_`mci 'hc``cc_'Uhgca Y`cb`]bY`fYgci fWfgz'UhhYbX'h\Y`@YUfb]b[
7 YbhfYzcf`gca Yh]a Yg`fYgi Va]hmci f`k cf_k]h\`h\Y`dfcV`Ya 'Z|I YX"'<ck Yj Yf`a cfY`gYf]ci g`]bghUbWfg`]b`Z[fgh

5 WUXYa]W = DZcfa Uhjcb

7 ci fgY '9j U`i Uh]cb 'UbX '8 Yj Y`cda Ybh'

: YYXVUW_cb`h\Y`Wci fgY`]g`[Uh\YfYX`dYf]cX]WU``mii g]b[`j Uf]ci g`a YUbgž]bWi X]b[`h\Y`I BGK a m9I dYf]YbW'`dfcW'ggž]bZcfa U``X]gW gg]cb`]b`h\Y`Z]bU``WUgg`Zcf`h\Y`Wci fgYžUbX`h\Y`GW\cc`'g Gh XYbh#GhUZZa YYh]b[g"'Mci f`ZYYXVUW_`]g`hU_Yb`gYf]ci g`mžUbX`Wcbh]bi U``]a dfcj Ya Ybhg`UfY`a UXY`hc`h\Y Wci fgY`VUgYXž]b`dUfhžcb`gi W\`ZYYXVUW_"

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5```ghi XYbhg`UfY`YI dYWhYX`hc`fYUX`UbX`VY`ZJa]`]Uf`k]h\`I BGK ; i]XY`]bYg`UbX`Dc`]WYg"'±0`dUfh]Wi`Ufž ghi XYbhg`g\ci``X`VY`ZJa]`]Uf`k]h\`h\Y`Zc``ck]b[.

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UGdYWJU`'7cbg]XYfUhcb

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EI Ua g

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.

8 lgWUla Yf

 $\label{thm:continuous} FZ[e\ UagdeWagf']`\ We\ we \ agf\ V\ we Uq[bf[a`\ aXU'See\ we SffZWVSfWfZW5 agdeWAgf']`\ W[e\ bgT'[eZW\ z'FZW `SfgdWaXU'See\ we Sk UZS`YWVgd]`Y fZWF\ wd_ S\ x\ wdfZW5 agdeWAgf']`\ W[e\ bgT'[eZ\ wz'? aaV'\ weZag'\ TW Ua`eg'f\ W \ XadfZ\ wgb fa VSf\ WU'See V\ weUq[bf[a` ez ;\ XfZ\ wd\ w[e\ S` k [` Ua`e[ef\ W\ Uk [` fZ\ WV\ weUq[bf[a` aX SUf[h[f[\we T\ wf] \ W\ fZ\ WG` [h\ we [fk f[_ \wfST'\ wS` V fZ\ W5 agdeWAgf']`\ w/SegbVSf\ w [` ? aaV'\ wfi fZ\ WV\ V\ weUq[bf[a` [` fZ\ w5 agdeWAgf']`\ w? aaV'\ wSbb'[\we z\ we z\ w$ bb']\ we z\ we z\$

7F = 7CG

7F = 7CG Dfcj]XYf 7cXY. \$\$\$-,;

5W_bck `YX[Ya YbhcZ7ci bhfm

 $K Y `UW_bck `YX[Y `fh Y `6YXY[U `dYcd `Y `k \c `UfY `fh Y `ffUX]f]cbU ``W gfcX]Ubg `cZfh Y ``UbXg `cb `k \] WX `I BGK ? Ybq]b[fcb `WUa di q `]q ``cWUfYX"$

5ddYbX]l. '9b[]bYYfg'5i glfU`]U'f95Ł'DfcZYgg]cbU`'9b[]bYYf'7ca dYhYbWm GHJbXUfX

Dfc[fUa '±bhYbXYX'@YUfb]b['CihWca Yg		
?bck `YX[Y'UbX'g_]```VUgY		
D9%%7ca dfY\Ybg]j Yžth\YcfmVUgYX'i bXYfgtUbX]b['cZth\Y'i bXYfd]bb]b d\mg]WU`'gW]YbWYg'UbX'th\Y'Yb[]bYYf]b['Z bXUa YbtU`g'Udd`]WUV`Y'tc'th\Y'Y		
D9%%.7cbWdhiU`ibXYfghUbX]b['cZh\Y'aUh\YaUh]WgžbiaYf]WU`UbU`mgWtadihYf'UbX`]bZcfaUh]cb'gW]YbWYg'k\]W\ibXYfd]b'h\Y'Yb[]bYYf]b['X]g\		
D9%" '±0!XYdh\ 'i bXYfghUbX]b['cZgdYWJU']ghVcX]Yg'cZ_bck 'YX[Y'k]h\]b'lX]gWJd`]bY	nY.Yp[]pAyyt]p[
D9%('8]gWfba YbhcZ_bck YX[Y'XYj Yc	k \]	‰