

**SAGEGLASS INFORMATIVE COMMENTARY  
ON THE  
INFLATION REDUCTION ACT OF 2022  
AS IT RELATES TO  
INTERNAL REVENUE CODE SECTION 48-ENERGY  
INVESTMENT TAX CREDIT (the "ITC")**

*The purpose of this Informative Commentary is to make you aware of some possibilities with respect to the investment tax credits so that you can work with your tax advisors to investigate your options. This Informative Commentary is not meant to be tax advice but merely as a tool to help our customers to investigate options to receive ITC because they are using SageGlass Dynamic Glass Solutions. Please note that just because you use SageGlass Dynamic Glass Solutions will not necessarily entitle you to receive the ITC- you will have to demonstrate that your project satisfies all the required criteria. Please consult with your tax advisors to determine if your project is entitled to the ITC based on your specific facts and circumstances.*

***This information was prepared with the assistance of the outside law firm to SageGlass, which is Holland & Knight, LLP. Holland & Knight, LLP has reviewed this commentary and agrees with its content and conclusions.***

**A. SAGEGLASS ELECTROCHROMIC GLASS.**

Sage Electrochromic Glass, Inc. ("SageGlass") is in the business of manufacturing and selling SageGlass electrochromic glass (otherwise known as "Dynamic Glass Systems"/"SageGlass") directly to owners or indirectly through contractors for installation in various forms of commercial buildings electrochromic glass, which uses electricity to enable adjustment of its tint either manually or automatically for the control of sunlight and heat in a building (see: [SageGlass | The Global Leader in Electrochromic Glass | SageGlass](#)). In addition to the health and aesthetic benefits this provides to the occupants of the building, it also provides substantial energy savings on

a year-round basis. SageGlass is popularly used in windows or as an entire wall in construction projects.

SageGlass coating consists of five layers of ceramic material.<sup>1</sup> Applying a low voltage of electricity darkens the coating as lithium ions and electrons transfer from one electrochromic layer to another electrochromic layer. Reversing the voltage polarity causes the ions and electrons to return to their original layer, causing the glass to return to its clear state. This solid-state reaction is controlled through a very low voltage (less than 5V DC) power supply.<sup>2</sup> A darkened state enables SageGlass to absorb and reflect away the sun's unwanted heat and glare. A clear state allows you to maximize daylight and solar energy via light/heat absorption.

The layers coating the glass are less than 1/50th the thickness of a human hair and are applied using sputter deposition, a low-cost and low-risk manufacturing process.<sup>3</sup> Transparent conductor layers sandwich around the electrochromic layer, the ion conductor, and the counter electrode. A positive voltage applied to the transparent conductor in contact with the counter electrode drives lithium ions from the ion conductor and into the electrochromic layer, while an electron extracted from the counter electrode flows around the external circuit and is inserted into the electrochromic layer. Once the coatings are applied, SageGlass is incorporated into industry standard insulating glass units which can be incorporated into nearly any window or skylight framing system.

**B. WHERE CAN YOU FIND INFORMATION ON THE INVESTMENT TAX CREDITS ("ITC")?**

*You can find it in Section 48 of the Internal Revenue Code of 1986 ("IRC"), as amended by the Inflation Reduction Act of 2022 ("IRA").*

Section 48 of the IRC has provided ITC based on the satisfaction of various conditions. The base rate for such investment tax credits can be as low as 6% and depending on satisfaction of different conditions can go as high as 50%. One of the preconditions of entitlement to such energy credits was that the "taxpayer" uses one or more **Energy Properties** (as defined in the IRC) in its **Energy Project** (also as

<sup>1</sup> How Dynamic Glass Works, SageGlass, <https://www.sageglass.com/en/faqs/how-dynamic-glass-works>.

<sup>2</sup> *Id.*

<sup>3</sup> *Id.*

defined in the IRC, generally meaning any project that uses one or more Energy Properties).

**C. IS SAGEGLASS'S ELECTROCHROMIC GLASS ENERGY PROPERTY? IS AN ENTIRE WINDOW SYSTEM INCLUDING DYNAMIC GLASS ENERGY PROPERTY?**

*We believe the answer to both is Yes.*

**1. SAGEGLASS'S ELECTROCHROMIC GLASS IS ENERGY PROPERTY.**

Until the enactment of the IRA, electrochromic glass was not included in the definitions of Energy Property. Section 48(a)(3)(A)(ii) of the IRC was amended by IRA to add electrochromic glass to the definition of Energy Property, which now reads:

*"Equipment which uses solar energy to illuminate the inside of a structure using fiber-optic distributed sunlight or **electrochromic glass which uses electricity to change its light transmittance properties in order to heat or cool a structure.**"*

The main sponsor of the original proposed bill was Senator Edward Markey, a strong proponent of dynamic glass.<sup>4</sup> In a recent press release, Senator Markey states, "The cleanest and cheapest watt of energy is one that is never used, and the Dynamic Glass Act would help lower emissions and energy costs by making electrochromic windows more affordable."<sup>5</sup> In the same article, while describing dynamic glass windows he describes them as windows that can be programmed to tint automatically in response to sunlight, minimizing glare and heat.<sup>6</sup>

It is clear that SageGlass' dynamic glass meets Senator Markley's definition. SageGlass applies a low voltage of electricity, allowing the dynamic glass to be in a darkened state and enabling the glass to absorb and reradiate away the sun's unwanted heat and glare. As Senator Markey states, the dynamic glass help buildings reduce their cooling costs and energy consumption, while maintaining natural light and access to views.

<sup>4</sup> Cite to leig

<sup>5</sup> Ed Markey, *supra* note 9.

<sup>6</sup> *Id.*

<sup>7</sup> See Congressional record, Volume 168, No. 135, Proceedings and Debates of the 117<sup>th</sup> Congress, Second Session, dated 12, August 2022.

**2. ENTIRE DYNAMIC GLASS SYSTEM**

We believe that the entire Dynamic Glass System, including all structural components (glass, window frame, etc.) is Energy Property. This conclusion is based on the congressional intent underlying Section 48(a)(3)(A)(ii) as found in the Congressional Record,<sup>7</sup> which specifically states that the intent of the amendment was to include the cost of the glass itself including the devices, the wiring and other components necessary for the glass to change its light transmittance properties, as well as the window frame and the capitalized costs for the installation of these components in the taxable basis on which the ITC is computed. In addition, in private letter 201043023<sup>8</sup> (which dealt with whether a PV curtain wall was energy property) the IRS concluded that the entire cost of purchasing and installing the PV curtain wall is the taxable basis on which the ITC is computed. This was the conclusion despite the glass being a structural component of a building and serving a dual purpose. So, as between determining whether the taxable basis on which the ITC is computed is either the incremental cost of producing the PV curtain wall or the full cost of the PV curtain wall, including its installation costs, the IRS concluded it was the full costs, plus installation.

**D. ARE YOU ELIGIBLE FOR ITC?**

*In order to be eligible for the energy credit the taxpayer must complete the construction, reconstruction, or erection of the energy property, or, if the taxpayer acquires the energy property, the original use of the energy property must commence with the taxpayer.<sup>9</sup>*

Typically, SageGlass will be sold to one or more building contractors who will install the glass and control system and then turn over the completed building or lease space to the owner upon completion of the project and the issuance of a certificate of occupancy. In this situation, the final owner of the building in which the dynamic glass is installed when the energy property is initially placed in service is eligible for the ITC. The Taxpayer must own the system

<sup>8</sup> See PLR 201043023 and PLR 201121005. Also, note Rev. Rul. 79-183, 1979-1;

<sup>9</sup> Code Section 48(a)(3)(B).

to take advantage of the ITC; a leased system is not eligible.<sup>10</sup> Whether or not the provider of the dynamic glass is also the provider of the window system has no bearing on credit eligibility.

Moreover, depreciation or amortization of the property must be allowable<sup>11</sup> and the property must meet any performance and quality standards which have been prescribed by the Secretary by regulations or are in effect at the time of the acquisition of the property.<sup>12</sup>

#### **E. WHAT ARE THE ENERGY INVESTMENT TAX CREDITS (“ITC”) AMOUNTS POST IRA?**

*The percentages of ITC depend on your project satisfying different criteria. The percentages as laid out in IRC, as amended by the IRA are as follows:*

##### **1. 30% ITC AND SAGE DYNAMIC GLASS SOLUTIONS.**

The Base rate for ITC is 6%. To be eligible for the 30% ITC the facility using electrochromic glass must meet either of the following two conditions:

(i) Less than 1 megawatt (“MW”) of electricity. The facility has a maximum net energy output must be less than 1 megawatt (“MW”) of electricity (as measured in alternating current) or thermal energy. Interestingly, because SageGlass Dynamic Glass Solution is an energy saving technology and not an energy generating technology, by definition the net output would be less than the 1 megawatt threshold and therefore we believe that the use of SageGlass Dynamic Glass Solutions would make you eligible for the 30% ITC. This credit is provided on the cumulative output of your project, so if you are using other Energy Property together with SageGlass, we believe you will need to consider the cumulative output of all the Energy Products; OR

(ii) Wage and Apprenticeship. If your facility output is higher than 1 MW you could still be eligible to get the 30% credit if you satisfy the wage and apprenticeship requirements.

The wage requirement would be satisfied if all laborers, mechanics, contractors, or subcontractors associated with the development of the facility are paid wages at

least at prevailing rates, as determined by the Secretary of Labor, during the construction, alteration and repair of the facility and for five years after.<sup>13</sup>

The apprenticeship requirement would be satisfied if a percentage of total labor hours for construction, alteration or repair work on the qualified facility are performed by qualified apprentices.<sup>14</sup> This is 10 percent for construction which begins before January 1, 2023, 12.5 percent for construction which begins in 2023, and 15 percent for construction which begins after December 31, 2023.<sup>15</sup> Further, there must be at least one apprentice for each taxpayer, contractor or subcontractor that employs four or more individuals to construct, alter, or repair the facility.<sup>16</sup> As a taxpayer, you must also comply with any applicable apprentice to journey worker ratios required by the Department of Labor or applicable state agency.<sup>17</sup>

##### **2. 10% FOR DOMESTIC CONTENT AND FACILITY LOCATION IN DESIGNATED COMMUNITIES**

If you are eligible for ITC per Clause D above and if you are entitled to 30% ITC because you satisfy either (i) or (ii) of Clause E (1) above, you may be entitled to an additional 10% ITC if you satisfy the Domestic Content requirement and also any additional 10% if your facility is located in a Designated Community.

(i) In order to satisfy the Domestic Content requirement, all steel or iron that is a component of the equipment or facility must be produced in the United States.<sup>18</sup> Additionally, a minimum of 40% of total manufactured products that are components of the facility must be manufactured in the United States.<sup>19</sup> Manufactured products will be deemed to have been produced in the United States if 40% or more of the total costs across all such manufactured products at such facility are attributable to manufactured products that are mined, produced, or manufactured in the United States.<sup>20</sup> It is important to note that we interpret the Domestic Content requirement to apply at the project or facility level, not just to the energy property, in this case Dynamic Glass. This means, for example, an entire commercial building using Dynamic Glass

<sup>10</sup> See Code Section 48(a)(3)(B); Jacob Marsh, Everything you need to know about the federal solar tax credit, August 16, 2022. Please see the prior footnote on inverted leases and transferring the Section 48 ITC to the lessee.

<sup>11</sup> Code Section 48(a)(3)(C).

<sup>12</sup> Code Section 48(a)(3)(D).

<sup>13</sup> Code Section 48(a)(10)(A).

<sup>14</sup> Code Section 48(a) (11); Code Section 45(b)(8).

<sup>15</sup> Code Section 48(a) (11); Code Section 45(b)(8)(A).

<sup>16</sup> Code Section 48(a) (11); Code Section 45(b)(8)(C).

<sup>17</sup> Code Section 48(a) (11); Code Section 45(b)(8)(B).

<sup>18</sup> Id.

<sup>19</sup> Id.

<sup>20</sup> Id.

would need to satisfy the Domestic Content requirements in order to claim the 10% bonus credit.

(ii) In order to satisfy the Designated Community requirement, a facility must be located at one of the following: (i) a brownfield site, (ii) a metropolitan or non-metropolitan statistical area which (A) has, or had any time during the period beginning in 2010, 0.17% or more direct employment or 25% or more local tax revenues, in either case related to the extraction, processing, transport, or storage of coal, oil or natural gas, or (B) has an unemployment rate above the national average for the previous year, or (iii) a census tract, or a census tract that is adjoining to, in which a coal mine has closed after 1999 or a coal-fired electric generating unit was retired after 2009.<sup>21</sup>

(iii) Note, if you are not entitled to the 30% ITC because you do not satisfy the less than 1 MW or the prevailing wage and apprenticeship requirements, you could potentially still be eligible for 2% over the base rate of 6% if you satisfy the designated community requirement.

#### **G. ARE THERE ANY CHANGES TO THE ITC AS IT RELATES TO DIRECT PAY AND TRANSFERABILITY?**

Although under previous tax acts in the renewable energy area, there was the ability to obtain grants in lieu of the tax credits, the IRA has taken a very expanded approach for taxpayers to realize the economic value of their tax credits. First, under Section 6417 of the Code, the IRA allows certain entities, including tax-exempt entities, states and political subdivisions, the Tennessee Valley Authority, Alaska Native Corporations, and Indian tribal governments, to take direct pay equal to the ITC amount.<sup>22</sup> The election must be made no later than the due date for the tax

return of the year in which the election is made. If the eligible entity is not required to file a return, the election is to be made no later than the date determined by Treasury. For those who qualify for direct pay, and with respect to certain credits, a facility loses its ability to qualify for 100% direct pay over time, absent meeting domestic content requirements.<sup>23</sup> Entities eligible for direct pay cannot transfer or sell those credits.

The IRA has implemented a new Section 6418 of the Code which allows taxpayers to transfer all, or any portion of, the ITC to another taxpayer.<sup>24</sup> This election must be made by the due date for the tax return of the year in which the credit is determined.<sup>25</sup> Once made, the election to transfer is irreversible.<sup>26</sup> To transfer, the buyer should pay for the credit in cash<sup>27</sup> and is not allowed to deduct the amount paid for such credit or to subsequently transfer the credit.<sup>28</sup> The payment is not included in the gross income of the original transferor,<sup>29</sup> however, a penalty is imposed if a transfer of credit is in excess of what the buyer could properly claim.<sup>30</sup>

Currently, there is no defined mechanism for transfer, and it will be subject to a future rule making.

#### **H. WHAT IS THE DURATION OF THE ITC FOR DYNAMIC GLASS?**

*The dynamic glass ITC only applies with respect to energy property, in this case the Dynamic Glass System the construction of which begins before January 1, 2025 and that is placed in service after 2022.*<sup>31</sup> While in certain instances “placed in service” has been interpreted to mean capable of being used

<sup>21</sup> Code Section 48(a) (14); Code Section 45(B) (11); The National Law Review, *supra* note 19.

<sup>22</sup> Code Section 6417.

<sup>23</sup> Code Section 48(a) (13); The National Law Review, *supra* note 19.

<sup>24</sup> Code Section 6418.

<sup>25</sup> *Id.*

<sup>26</sup> *Id.*

<sup>27</sup> Code Section 6418(b).

<sup>28</sup> *Id.*

<sup>29</sup> *Id.*

<sup>30</sup> Code Section 6418(g).

<sup>31</sup> Code Section 48(a)(3)(A)(ii). This section, and the actual text of the IRA effecting the amendment, state as follows: Code Sec. 48(a)(3)(A)(ii), following, shall apply to property placed in service after 12/31/2022. See above for Code Sec. 48(a)(3)(A)(ii), as it applies to property placed in service before 1/1/2023.

"(ii) equipment which uses solar energy to illuminate the inside of a structure using fiber-optic distributed sunlight , or

electrochromic glass which uses electricity to change its light transmittance properties in order to heat or cool a structure, but only with respect to property the construction of which begins before January 1, 2025." The various tax incentive provisions of the IRA, which includes the ITC under Section 48, speak in terms of either beginning construction of energy property or when the energy property is placed in service. These two benchmarks are different and are intended to be distinct. Beginning construction relates to two tests that the IRS has adopted for renewable projects set forth in IRS Notice 2018-59, consisting of either the (i) the beginning of material physical work test in which substantial physical work of the energy product is initiated (this is a facts and circumstances test), or (ii) paying five percent (5%) or more of the total cost of the energy property (this is a numbers-driven test), and in the case of either test, making continuous progress towards the completion of construction. Placed in service, on the other hand, relates to when the energy property has been installed and is either capable of being used by the taxpayer or ready to begin commercial operation and is actually operating, which

for its intended purpose, in other cases actual use or commercial operation is required. In the context of a Dynamic Glass System installed in a building, it would seem that placed in service will mean when the building is capable of being occupied- in other words, when a certificate of occupancy has been granted.<sup>32</sup>

“Beginning construction” relates to two tests that the IRS has adopted for renewable projects set forth in IRS Notice 2018-59, consisting of either the (i) the beginning of material physical work test in which substantial physical work is initiated (this is a facts and circumstances test), or (ii) paying five percent (5%) or more of the total cost of the energy property (this is a numbers-driven test), and in the case of either test, making continuous progress towards the completion of construction. Unless additional guidance is given by the IRS, in reliance of IRS Notice 2018-59, it would seem prudent to advise customers that at least five percent (5%) of the cost of the Dynamic Glass System should be paid for by December 31, 2024 in order to meet the safe harbor under IRS Notice 2018-59.

The ITC for Dynamic Glass will not be available post January 1, 2025<sup>33</sup>, as it is intended to be replaced by the newly introduced Clean Electricity Investment Credit in the IRA after January 1, 2025, which will only be available for property that generates electricity and since SageGlass does not generate electricity but merely saves electricity by minimizing glare and heat from the sun, it will not be covered by the Clean Electricity Investment Credit. Effectively, if construction of the energy property begins before January 1, 2025 and continuous progress towards completion is maintained, even though the property will not be placed in service until 2025, it appears it will still qualify for the ITC under Section 48 of the Code.

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in case of a building project would possibly be the certificate of operation. Placed in service will always be at a point in time that is after when construction began as to the energy property. Also, placed in service has been interpreted by the courts to have slightly different meanings depending on the circumstances. While in certain instances placed in service has been interpreted to mean capable of being used for its intended purpose, in other cases actual use or commercial operation is required. In the context of a Dynamic Glass

System installed in a building, it would seem that placed in service will mean when the building is capable of being occupied- in other words, when a certificate of occupancy has been granted.

<sup>32</sup> Ibid

<sup>33</sup> The Inflation Reduction Act: Key Provisions Regarding the ITC and PTC, THE NATIONAL LAW REVIEW, Volume XII, Number 263, August 12, 2022.